Theoretical Notes
Note 173

SC-RR-72 0165

ON THE ADEQUACY OF A STRAIGHTFORWARD PERTURBATION EXPANSION FOR ESTIMATING THE ELECTROMAGNETIC RESPONSE WITHIN A LOSSY DIELECTRIC CYLINDER EXCITED BY A RADIATION PULSE

G. J. Scrivner and D. L. Mangan

Radiation Effects Division II
Sandia Laboratories
Albuquerque, New Mexico
87115

June 1972

ABSTRACT

A straightforward (pedestrian) approximation scheme is applied to a transient electromagnetic field problem associated with a finite-length cylindrical cavity bounded by perfectly conducting walls. The cavity is filled with a homogeneous lossy dielectric material. Analytic expressions for the zeroth- and first-order terms of the perturbation solution for each of the relevant components of the electric and magnetic fields generated by an axially propagating current pulse are presented. Results obtained for various sample problems are examined and comparisons with the exact solutions are highlighted. The adequacy and limitations of such an approximation scheme are discussed.

Key words: Electromagnetic fields, electromagnetic pulse, radiation effects

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES
(Continued)

ON THE ADEQUACY OF A STRAIGHTFORWARD PERTURBATION EXPANSION FOR ESTIMATING THE ELECTROMAGNETIC RESPONSE WITHIN A LOSSY DIELECTRIC CYLINDER EXCITED BY A RADIATION PULSE

INTRODUCTION

In our last paper[1] we discussed the reason for our interest in examining the electromagnetic response of a cylindrical cavity excited by an axially driven current pulse. We presented exact analytical solutions for the electric and magnetic fields for the simple model problem we investigated. Numerical computations based on these solutions indicated that, for a wide class of problems of interest, the temporal behavior of the electromagnetic response matches closely the time dependence of the excitation pulse except for a relatively small-amplitude, higher frequency signal. This observation, coupled with comments by Baum,[2] aroused our interest in the feasibility of obtaining approximate solutions which would be less complex in mathematical structure than the exact solutions, yet reasonably adequate for many engineering applications.

In this paper we employ a straightforward perturbation technique[3] to obtain such approximate solutions. Comparisons with the exact response are presented for several sample problems. The adequacy of this approximation scheme and its inherent limitations are examined.

The nature of the approximate solutions is such that the time and spatial behavior are effectively uncoupled. Relegated to the appendix is a set of tables from which the spatial variation of the electromagnetic responses for various cavity shapes can be assessed.

DESCRIPTION OF MODEL PROBLEM

The physical configuration which we examine is a finite-length cylindrical cavity having perfectly conducting boundaries and filled with a rather arbitrary medium. We assume that the radiation is incident on one of the end faces and results only in an axially driven current. We assume no spatial variation of the induced current pulse in a plane perpendicular to the axis of the cylinder. We take zero time to coincide with the instant that the radiation pulse impinges upon the front face of the cavity, and we assume that the temporal behavior of the current pulse is identical throughout the cavity except for a simple time lag resulting from the axial propagation of the driving radiation pulse. We assume that the medium within the cavity is homogeneous and can be characterized by a time-independent conductivity, permittivity, and permeability. The geometry is shown in Fig. 1.

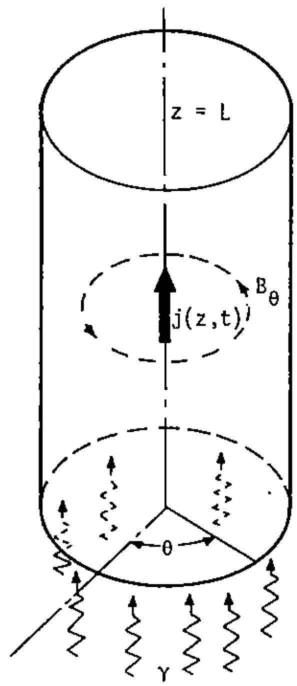

Fig. 1 Coordinate system for model.

MATHEMATICAL ANALYSIS

In this section we present the mathematical manipulations necessary to obtain a perturbation approximation for the electromagnetic response of the above stated problem. We will consistently employ the MKS system of units for which the appropriate forms of Maxwell's field equations are

$$\nabla \cdot \vec{D} = \rho , \tag{1}$$

$$\nabla \cdot \vec{B} = 0 , \tag{2}$$

$$\nabla \times \vec{E} = - \frac{\partial \vec{B}}{\partial t} , \tag{3}$$

and

$$\nabla \times \vec{H} = \vec{j} + \frac{\partial \vec{D}}{\partial t} + \sigma \vec{E} , \tag{4}$$

where σ is the medium conductivity, $\vec{j}$ is the radiation-produced current density, and ρ is its associated charge density. In addition, we have the constitutive equations which relate the electric displacement $\vec{D}$ to the electric field $\vec{E}$ and the magnetic field $\vec{B}$ to the magnetic field intensity $\vec{H}$:

$$\vec{D} = \epsilon \vec{E} \tag{5}$$

and

$$\vec{B} = \mu \vec{H} \, , \tag{6}$$

where ϵ and μ are the medium permittivity and permeability, respectively.

We assume that the radiation-produced current density is of the form

$$\vec{j}(z, t) = j_m f(t - z/c)\vec{a}_z \, , \tag{7}$$

where f(t) has been normalized so that its peak value is unity and hence j_m corresponds to the maximum value attained by the current density, c is the electromagnetic wave speed, and $\vec{a}_z$ is a unit vector in the axial direction.

The first step in the analysis involves nondimensionalizing the governing equations. Axial positions will be scaled with respect to the cylinder length L, radial positions with respect to the cylinder radius R, and time with respect to a parameter τ which is of the order of magnitude of the duration of the driving pulse. For convenience, the reader can associate τ with the time required for the current density pulse to reach its maximum value. Denoting the nondimensionalized quantities by *, we use Eqs. (5) and (6) and rewrite Eqs. (1) through (4) and Eq. (7) as

$$\nabla^* \cdot \vec{D}^* = \rho^* \, , \tag{8}$$

$$\nabla^* \cdot \vec{H}^* = 0 \, , \tag{9}$$

$$\nabla^* \times \vec{D}^* = -\beta \frac{\partial \vec{H}^*}{\partial t^*} \, , \tag{10}$$

$$\nabla^* \times \vec{H}^* = \vec{j}^* + \beta \frac{\partial \vec{D}^*}{\partial t^*} + \sigma^* \vec{D}^* \, , \tag{11}$$

and

$$\vec{j}^*(z^*, t^*) = f(t^* - \beta z^*)\vec{a}_z \, , \tag{12}$$

where

$\vec{D}^* = \vec{D}c/(Lj_m)$, $\vec{H}^* = \vec{H}/(Lj_m)$, $\rho^* = \rho c/(Lj_m)$, $\vec{j}^* = \vec{j}/j_m$, $t^* = t/\tau$, $z^* = z/L$, $\nabla^* = L\nabla$, $\beta = L/(c\tau)$, and $\sigma^* = \sigma L/(\epsilon c)$. In the remainder of this paper, the * notation will be omitted with the understanding that all quantities are nondimensionalized.

The equations above permit the definition of a scalar potential φ and a vector potential $\vec{A}$, such that

$$\vec{H} = \nabla \times \vec{A} \tag{13}$$

and

$$\vec{D} = -\nabla\varphi - \beta \frac{\partial \vec{A}}{\partial t} . \quad (14)$$

We choose to employ the Coulomb gauge, thereby restricting $\vec{A}$ to have zero divergence. Therefore, from Eqs. (8) and (11),

$$\nabla^2 \varphi = -\rho \quad (15)$$

and

$$\nabla^2 \vec{A} - \beta\sigma \frac{\partial \vec{A}}{\partial t} - \beta^2 \frac{\partial^2 \vec{A}}{\partial t^2} = -\vec{J} + \left(\beta \frac{\partial}{\partial t} + \sigma\right)\nabla\varphi . \quad (16)$$

The appropriate charge conservation equation can be obtained by taking the divergence of Eq. (11) and employing Eq. (8):

$$\nabla \cdot \vec{J} + \left(\beta \frac{\partial}{\partial t} + \sigma\right)\rho = 0 . \quad (17)$$

We note that, physically, the parameter β represents the ratio of one transit time across the length of the cavity to the characteristic time associated with the driving current. The class of problems which we will investigate in this paper is such that $\beta << 1$. (For example, if one considers a cavity having a length of 0.1 meter and takes c as 3×10^8 m/sec, then, assuming characteristic radiation times of 5×10^{-8} sec and 5×10^{-9} sec as representative of the present capability of pulsed x-ray and pulsed electron beam machines, one can compute β values of approximately 0.007 and 0.07, respectively.) Since the parameter β is small, it appears desirable to obtain an expansion of $f(t - \beta z)$ in powers of β. Assuming that $f(t - \beta z)$ is sufficiently well behaved, we can obtain the desired expansion as a Taylor series. Therefore, limited by the restriction that $t > \beta z$, we write

$$f(t - \beta z) = f(t) - \beta z \frac{\partial f(t)}{\partial t} + \frac{(-\beta z)^2}{2} \frac{\partial^2 f(t)}{\partial t^2} + \cdots . \quad (18)$$

The next logical step is to acquire a similar expansion for the charge density ρ. To achieve this end, we employ the charge continuity equation, (17). At this stage it becomes necessary to specify the relative order of magnitude of the conductivity σ in relation to the parameter β. We further restrict ourselves to the class of problems for which <u>σ is of order β, or smaller</u>. With these assumptions,

$$\rho = \rho_o + \beta\rho_1 + \cdots , \quad (19)$$

where

$$\rho_o = \int_o^t \frac{\partial f(\hat{t})}{\partial \hat{t}} \exp\left[(\sigma/\beta)(\hat{t} - t)\right] d\hat{t} , \tag{20}$$

and

$$\rho_1 = -z\left[\int_o^t \frac{\partial^2 f(\hat{t})}{\partial \hat{t}^2} \exp\left[(\sigma/\beta)(\hat{t} - t)\right] d\hat{t} + \delta \exp(-\sigma t/\rho)\right] , \tag{21}$$

where

$$\delta = \left.\frac{\partial f}{\partial t}\right|_{t=0} . \tag{22}$$

Given the above expansions for ρ and f and the assumption on σ, one can deduce from Maxwell's equations that the appropriate form for φ, $\vec{A}$, $\vec{D}$, and $\vec{H}$ are

$$\varphi = \varphi_o + \beta\varphi_1 + \beta^2\varphi_2 + \cdots . \tag{23}$$

$$\vec{A} = \vec{A}_o + \beta\vec{A}_1 + \beta^2\vec{A}_2 + \cdots , \tag{24}$$

$$\vec{D} = \vec{D}_o + \beta\vec{D}_1 + \beta^2\vec{D}_2 + \cdots , \tag{25}$$

and

$$\vec{H} = \vec{H}_o + \beta\vec{H}_1 + \beta^2\vec{H}_2 + \cdots . \tag{26}$$

To obtain approximations for $\vec{D}$ and $\vec{H}$ valid to order β, we note from Eqs. (13) and (14) that

$$\vec{H} \approx \vec{H}_o + \beta\vec{H}_1 = \nabla \times (\vec{A}_o + \beta\vec{A}_1) , \tag{27}$$

and

$$\vec{D} \approx \vec{D}_o + \beta\vec{D}_1 = -\nabla(\varphi_o + \beta\varphi_1) - \beta\frac{\partial\vec{A}_o}{\partial t} , \tag{28}$$

where

$$\nabla^2\varphi_o = -\rho_o , \tag{29}$$

$$\nabla^2\varphi_1 = -\rho_1 , \tag{30}$$

$$\nabla^2\vec{A}_o = -f(t)\vec{a}_z , \tag{31}$$

and

$$\nabla^2 \vec{A}_1 = z \frac{\partial f(t)}{\partial t} \vec{a}_z + \left(\frac{\partial}{\partial t} + (\sigma/\beta) \right) \nabla \varphi_o . \tag{32}$$

We assume cylindrical symmetry, realize that the only nonzero components of the electric and magnetic fields are D_z, D_r, and H_θ (see Ref. 1), and employ the boundary conditions that the tangential components of the electric fields vanish at the walls of the conducting boundary. The resulting field expressions, valid for $t > \beta$, are:

$$D_z(r, z, \lambda, t) \approx 2\left[f(t) - I_1(t)\right] \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r)}{\alpha_n J_1(\alpha_n) \alpha_n \lambda \sinh \alpha_n \lambda} (\cosh \alpha_n \lambda z - \cosh \alpha_n \lambda (1 - z))$$

$$- \beta \left\{ 2\left[\frac{\partial f(t)}{\partial t} - (\sigma/\beta)(f(t) - I_1(t))\right] \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r) \cosh \alpha_n \lambda z}{\alpha_n J_1(\alpha_n) \alpha_n \lambda \sinh \alpha_n \lambda} \right.$$

$$\left. + 2\left((\sigma/\beta)\left[f(t) - I_1(t)\right] \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r)}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda)^2} \right\} , \tag{33}$$

$$D_r(r, z, \lambda, t) \approx -2\left[f(t) - I_1(t)\right] \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)}{\alpha_n J_1(\alpha_n) \alpha_n \lambda \sinh \alpha_n \lambda} (\sinh \alpha_n \lambda z + \sinh \alpha_n \lambda (1 - z) - \sinh \alpha_n \lambda)$$

$$- \beta \left\{ 2\left[\frac{\partial f(t)}{\partial t} - (\sigma/\beta)(f(t) - I_1(t))\right] \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)(\sinh \alpha_n \lambda z - z \sinh \alpha_n \lambda)}{\alpha_n J_1(\alpha_n) \alpha_n \lambda \sinh \alpha_n \lambda} \right\} , \tag{34}$$

and

$$H_\theta(r, z, \lambda, t) = 2f(t) \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)}{\alpha_n J_1(\alpha_n) \alpha_n \lambda}$$

$$+ \beta \left\{ 2 \frac{\partial f(t)}{\partial t} \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda)^2 \sinh \alpha_n \lambda} \left[\cosh \alpha_n \lambda z - \cosh \alpha_n \lambda (1 - z) - \alpha_n \lambda z \sinh \alpha_n \lambda\right] \right\} , \tag{35}$$

where

$$I_1(t) = (\sigma/\beta) \int_o^t f(\hat{t}) \exp\left[(\sigma/\beta)(\hat{t} - t)\right] d\hat{t} , \tag{36}$$

$$\lambda = L/R , \tag{37}$$

and $\left[\alpha_n : n=1, 2, 3 \cdots\right]$ is defined as the ordered set of ascending positive roots of the equation

$$J_o(x) = 0 , \tag{38}$$

where $J_n(x)$ is the ordinary Bessel function of the first kind and n-th order.

A few observations about the basic analytic structure of the resultant approximations are appropriate. In all of the expressions, time dependence is separated from space dependence, and the effects caused by inclusion of conductivity appear only in the time-dependent term. None of the approximations exhibits the oscillatory behavior found in the exact analytical solutions.[1] It should be noted, however, that examination of the exact analytical solutions[1] indicated that a reduction in the value of β resulted in a reduction in the amplitude of the oscillatory behavior of the temporal dependence of the electromagnetic response. To zeroth-order, D_z and D_r have an identical time dependence. Also, to this order conductivity only affects the conservative part of the electric field with a quite characteristic degradation of the charge density buildup. Conductivity does not appear in the expression for the magnetic field H_θ and the zeroth-order term corresponds to the often used approximation, $\nabla \times \vec{H} = f(t)\vec{a}_z$.

DISCUSSION OF SAMPLE PROBLEM RESULTS

The equations obtained in the previous section were programmed for the CDC 6600 computer. Our initial calculations have been restricted to an examination of a cylinder having a length-to-radius ratio of 0.4. The time behavior of the nondimensionalized radiation-produced current density pulse is taken to be

$$f(t) = t \exp(1 - t) , \tag{39}$$

and the reader is reminded that t has been nondimensionalized to t/τ, where τ is the time required for the current density to reach its maximum value. Figure 2 is a plot of the driving current density pulse.

In the remaining figures, we depict the approximations to the electromagnetic response at a specific point in the cavity for two values of β, 0.04 and 0.004, and two corresponding values of nondimensionalized conductivity σ, 0.05 and 0.005. First, we examine plots of the total approximations to order β, and indicate the magnitude of the first-order corrections. We then compare the total approximations to the exact analytical solutions. The results are presented in non-dimensionalized parameters.

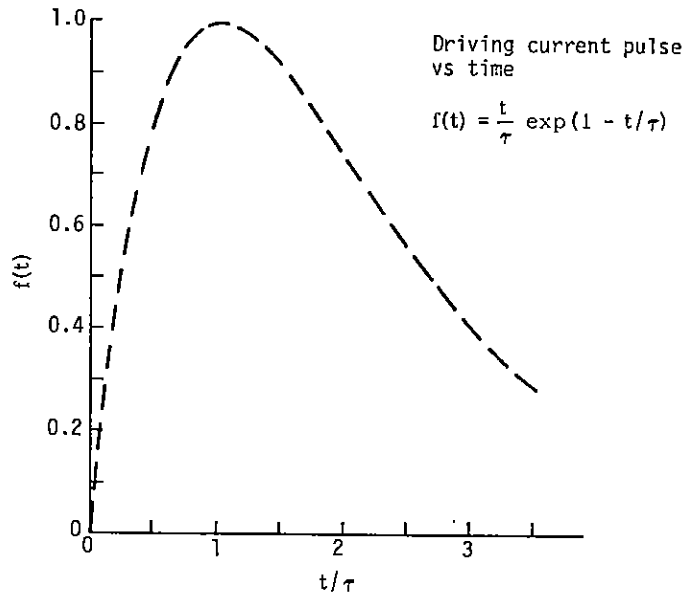

Fig. 2 Normalized plot of the driving current density temporal behavior.

Approximate Solutions

The time behavior of the approximate electromagnetic responses at a specific point within the cavity for β equal to 0.04 and zero conductivity is displayed in Figs. 3 through 5. These curves show the total approximation to order β as well as the first-order term. For a conductivity of 0.05, the electric fields, as shown in Figs. 6 and 7, are reduced as expected.[1] For β equal to 0.004 and conductivity values of zero and 0.005, the approximate responses are shown in Figs. 8 through 12.

Comparison to Exact Analytical Solutions

In the remaining plots, Figs. 13 through 24, the temporal behaviors of the approximate electromagnetic responses are compared to the exact analytic solutions at a specific point within the cavity. As β is reduced, the approximations agree more closely to the exact solutions, as expected from the perturbation technique employed. It is observed that the total approximations are tending to produce functions which thread in an averaging sense the oscillatory behavior.

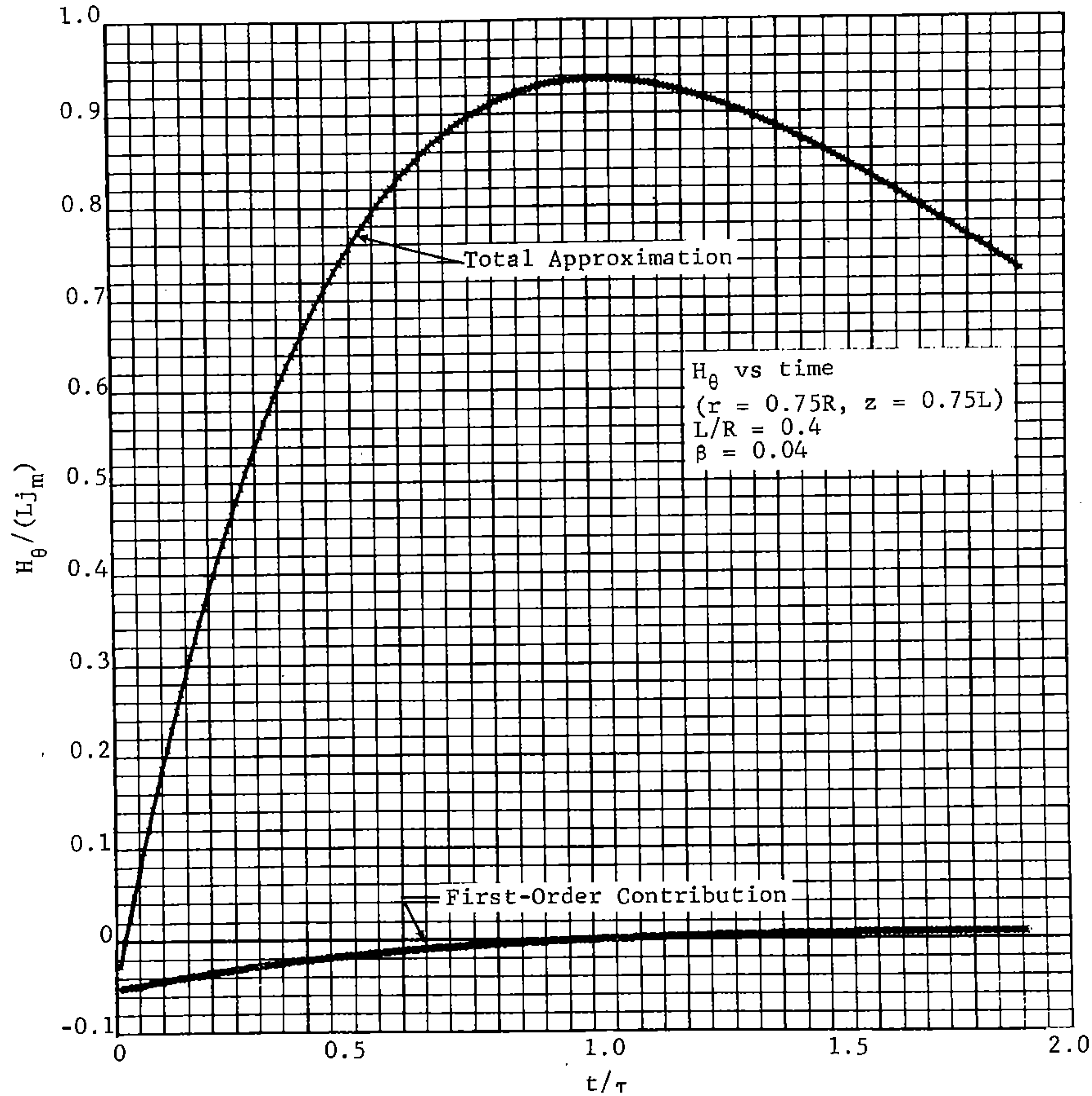

Fig. 3 Approximate temporal behavior of H_θ for $\beta = 0.04$.

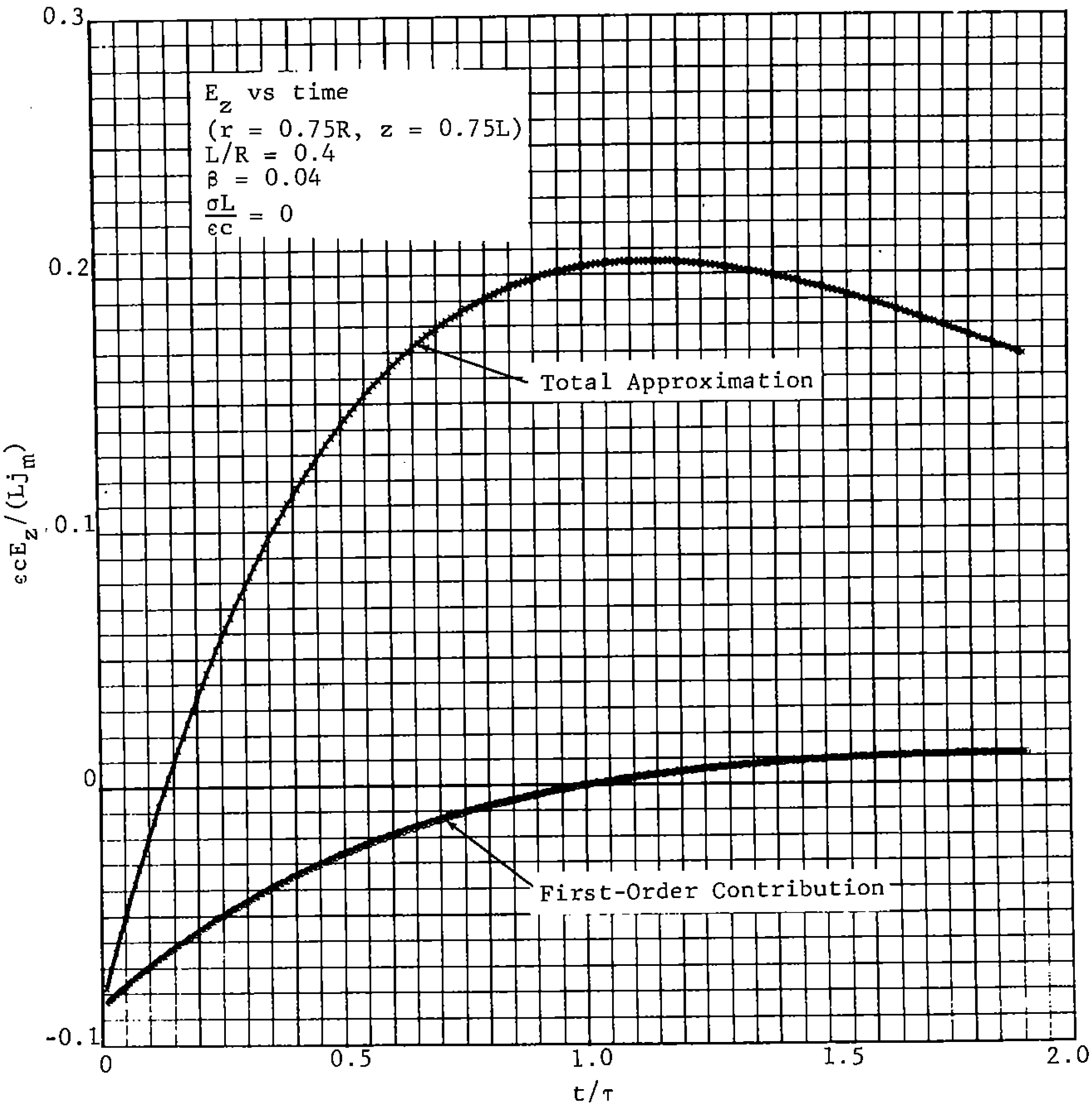

Fig. 4 Approximate temporal behavior of E_z for $\beta = 0.04$ and zero conductivity.

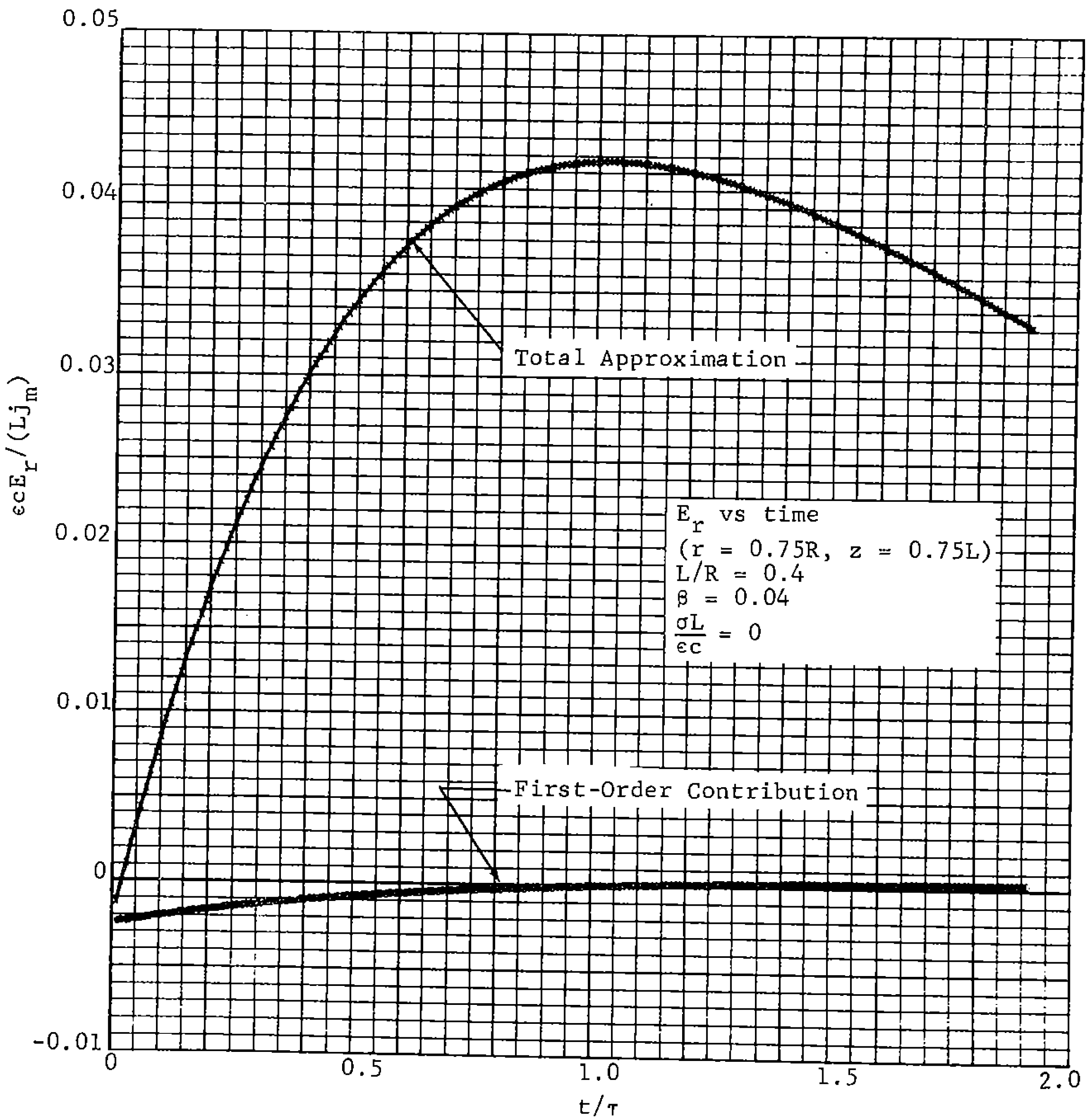

Fig. 5 Approximate temporal behavior of E_r for $\beta = 0.04$ and zero conductivity.

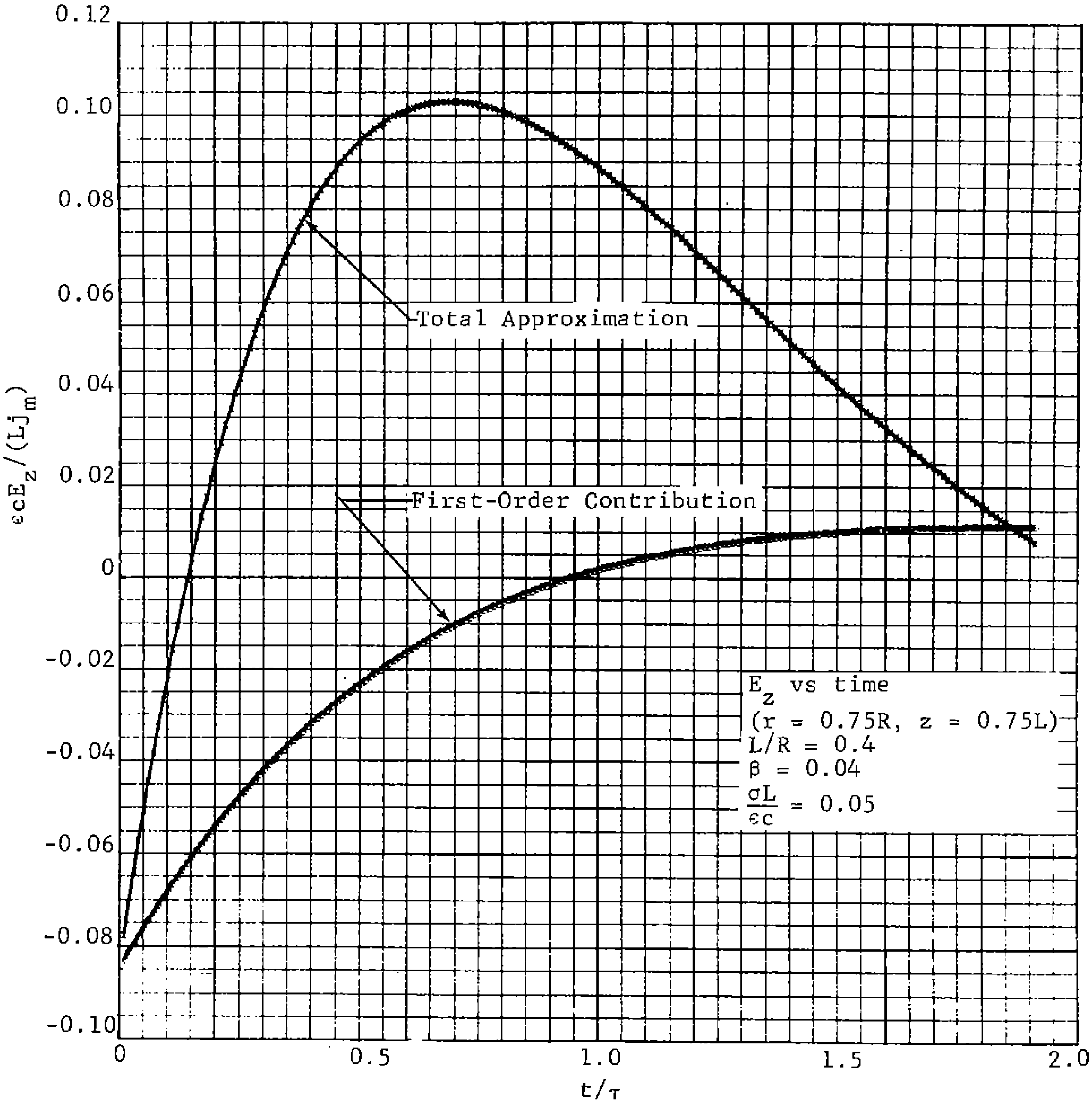

Fig. 6 Approximate temporal behavior of E_z for $\beta = 0.04$ and $\sigma L/\epsilon c = 0.05$.

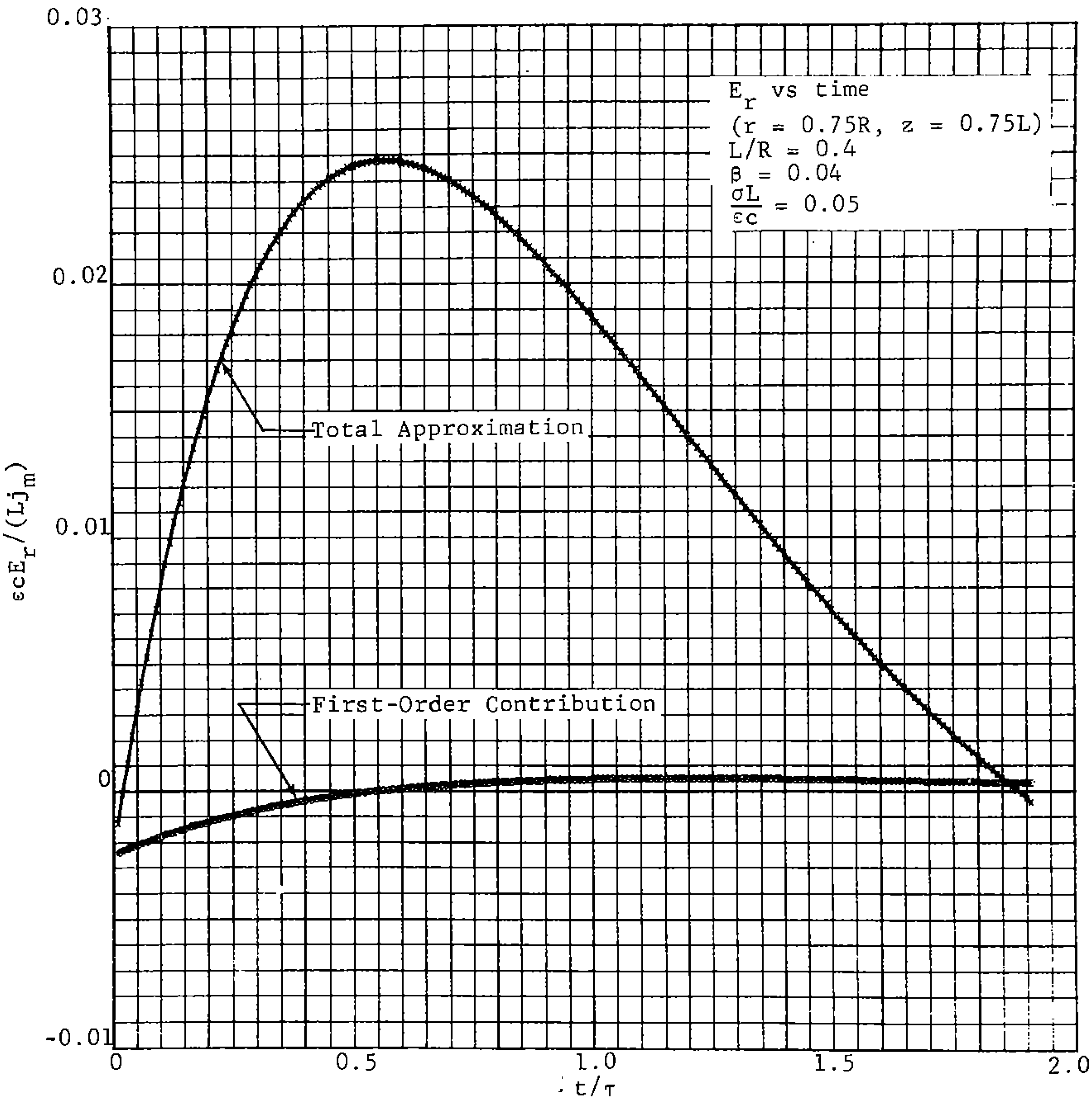

Fig. 7 Approximate temporal behavior of E_r for β = 0.04 and $\sigma L/\epsilon c$ = 0.05.

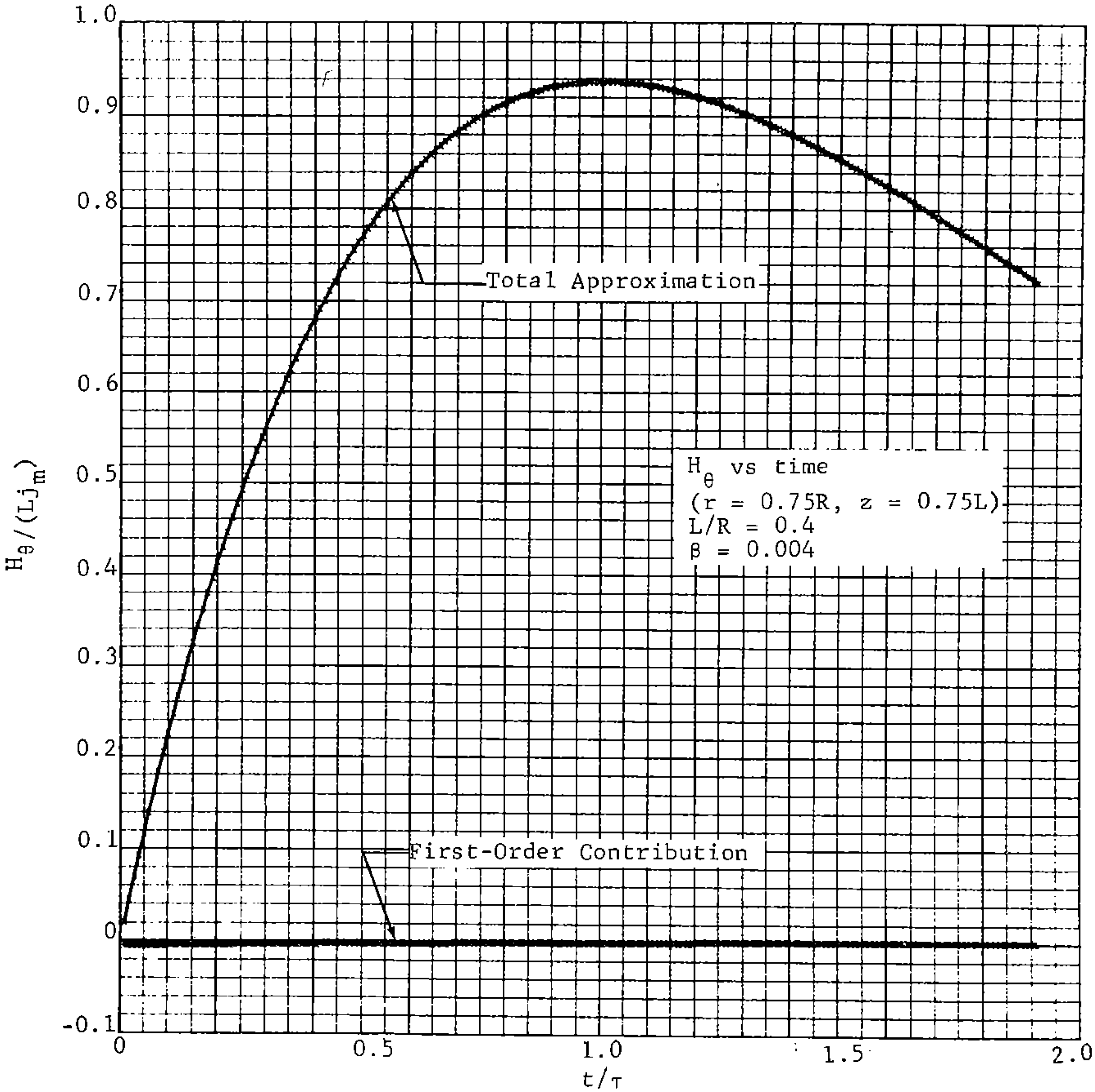

Fig. 8 Approximate temporal behavior of H_θ for β = 0.004.

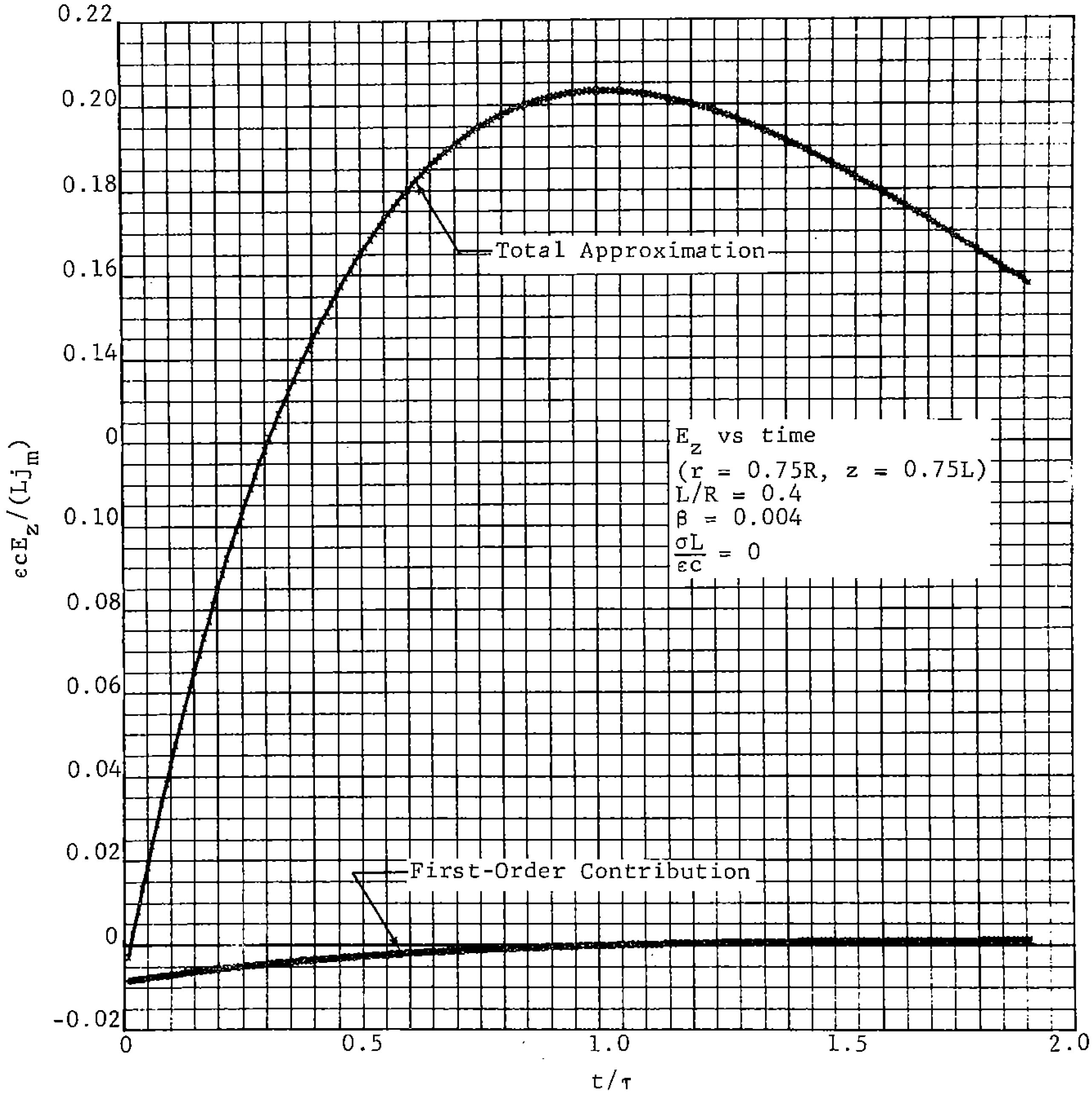

Fig. 9 Approximate temporal behavior of E_z for $\beta = 0.004$ and zero conductivity.

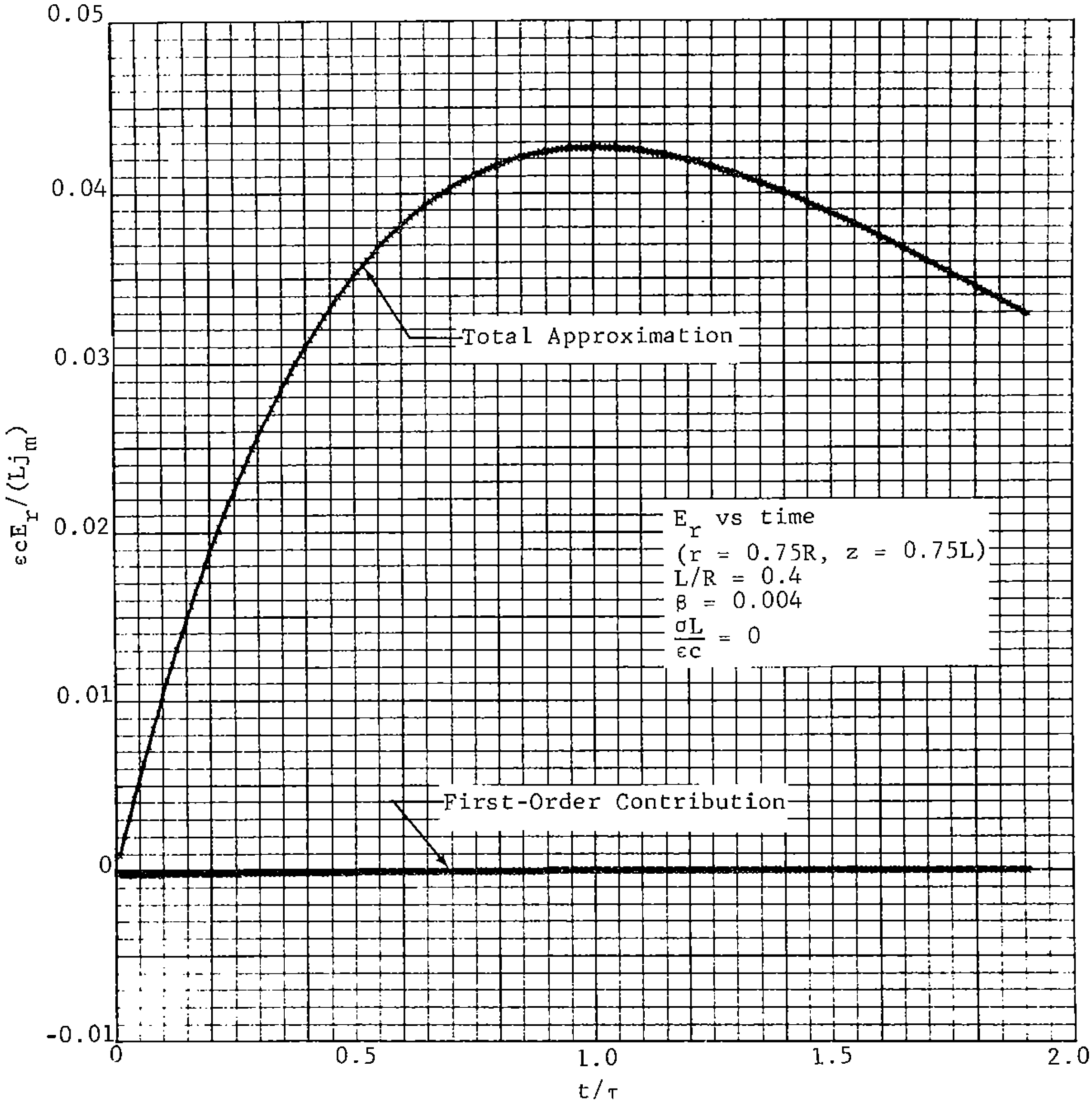

Fig. 10 Approximate temporal behavior of E_r for β = 0.004 and zero conductivity.

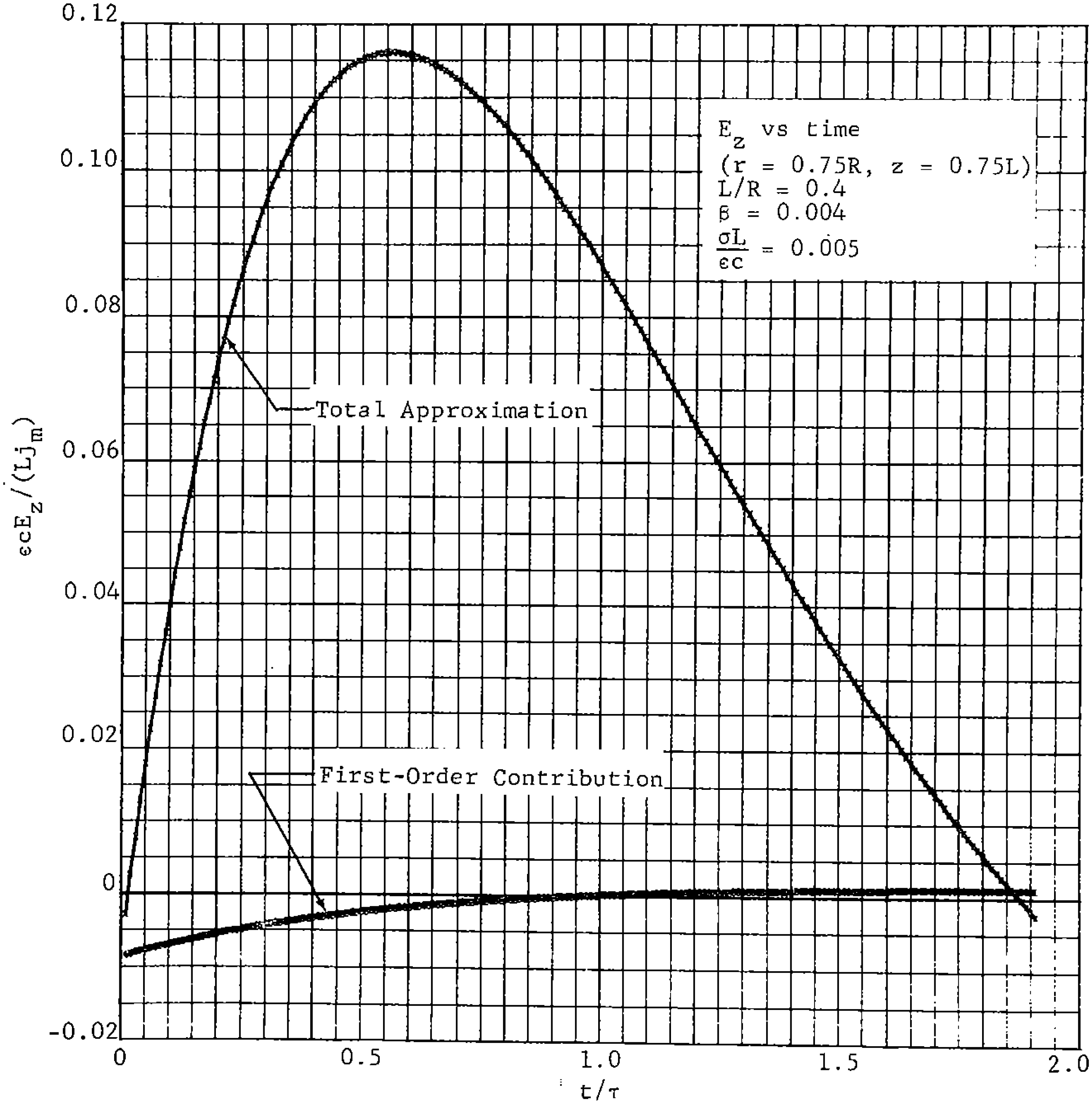

Fig. 11 Approximate temporal behavior of E_z for $\beta = 0.004$ and $\sigma L/\epsilon c = 0.005$.

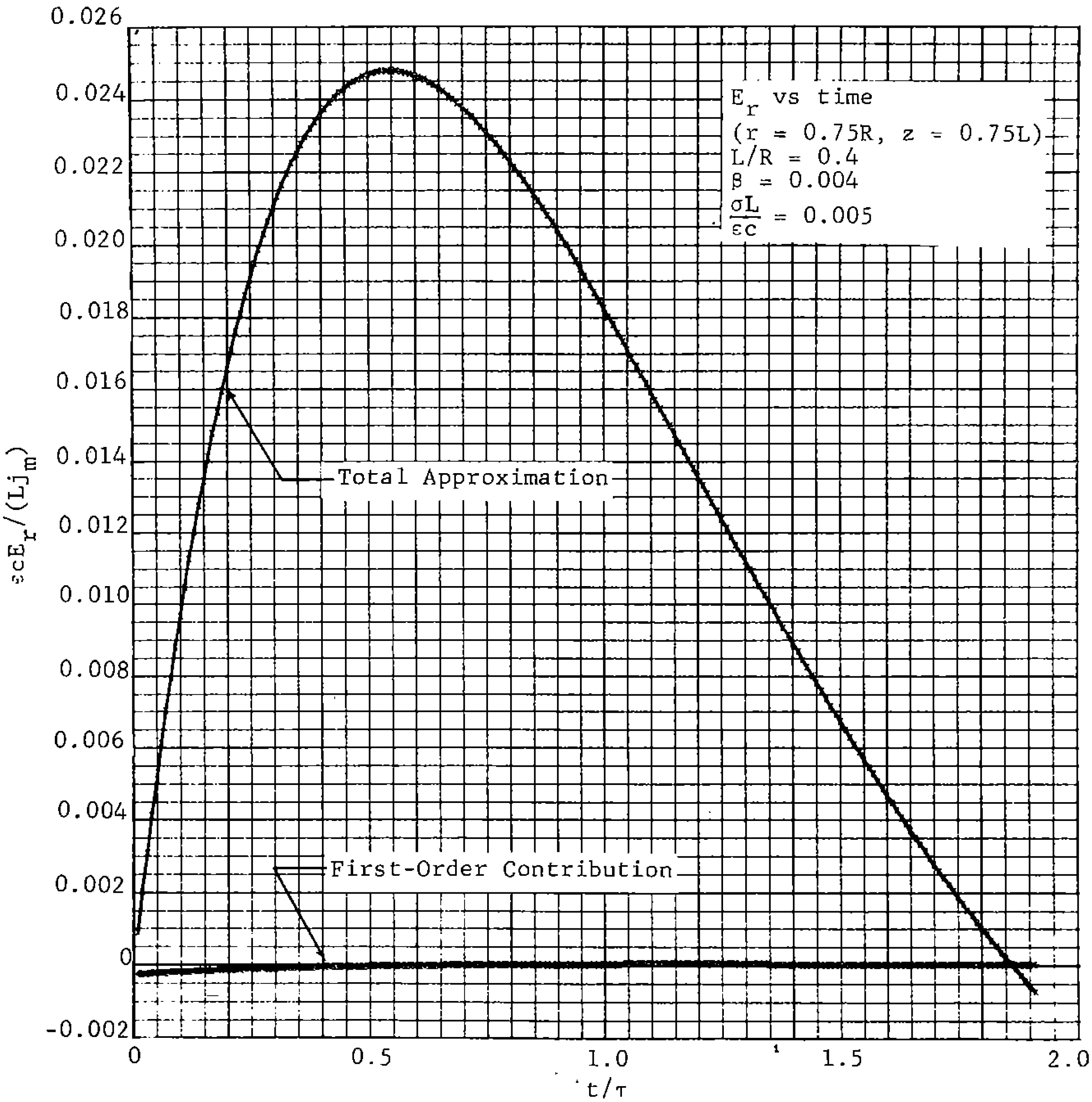

Fig. 12 Approximate temporal behavior of E_r for $\beta = 0.004$ and $\sigma L/\epsilon c = 0.005$.

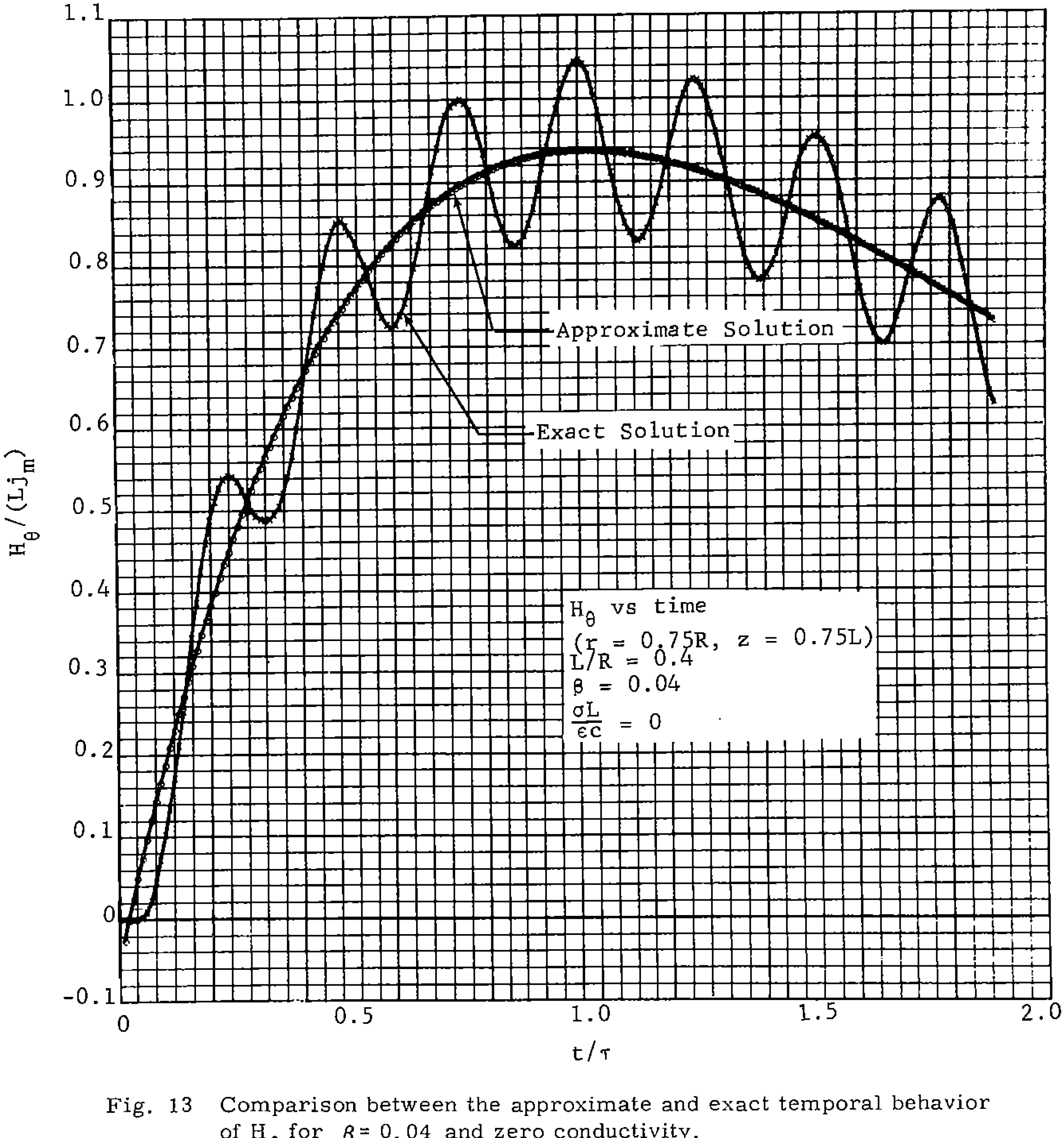

Fig. 13 Comparison between the approximate and exact temporal behavior of H_θ for $\beta = 0.04$ and zero conductivity.

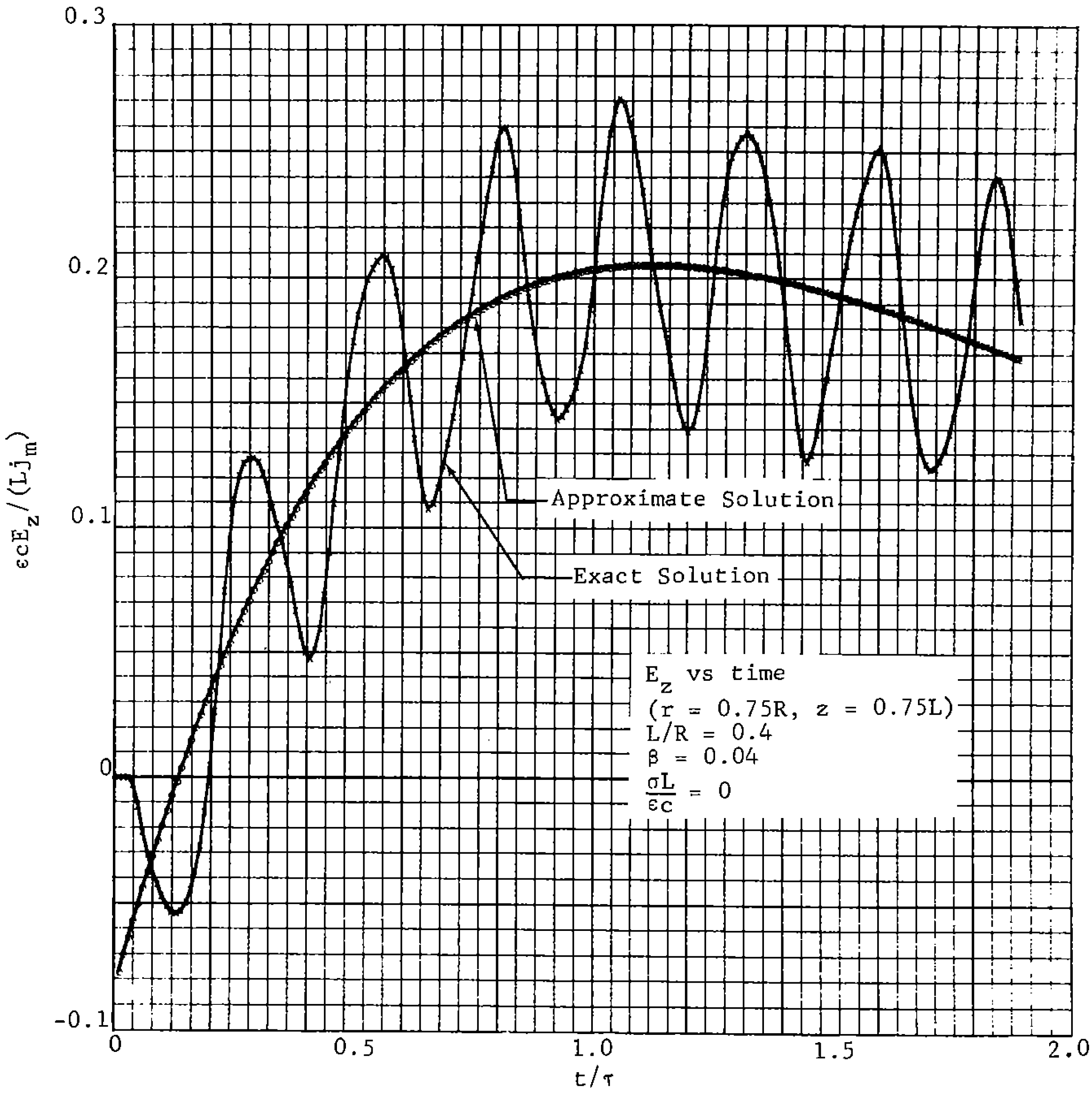

Fig. 14 Comparison between the approximate and exact temporal behavior of E_z for $\beta = 0.04$ and zero conductivity.

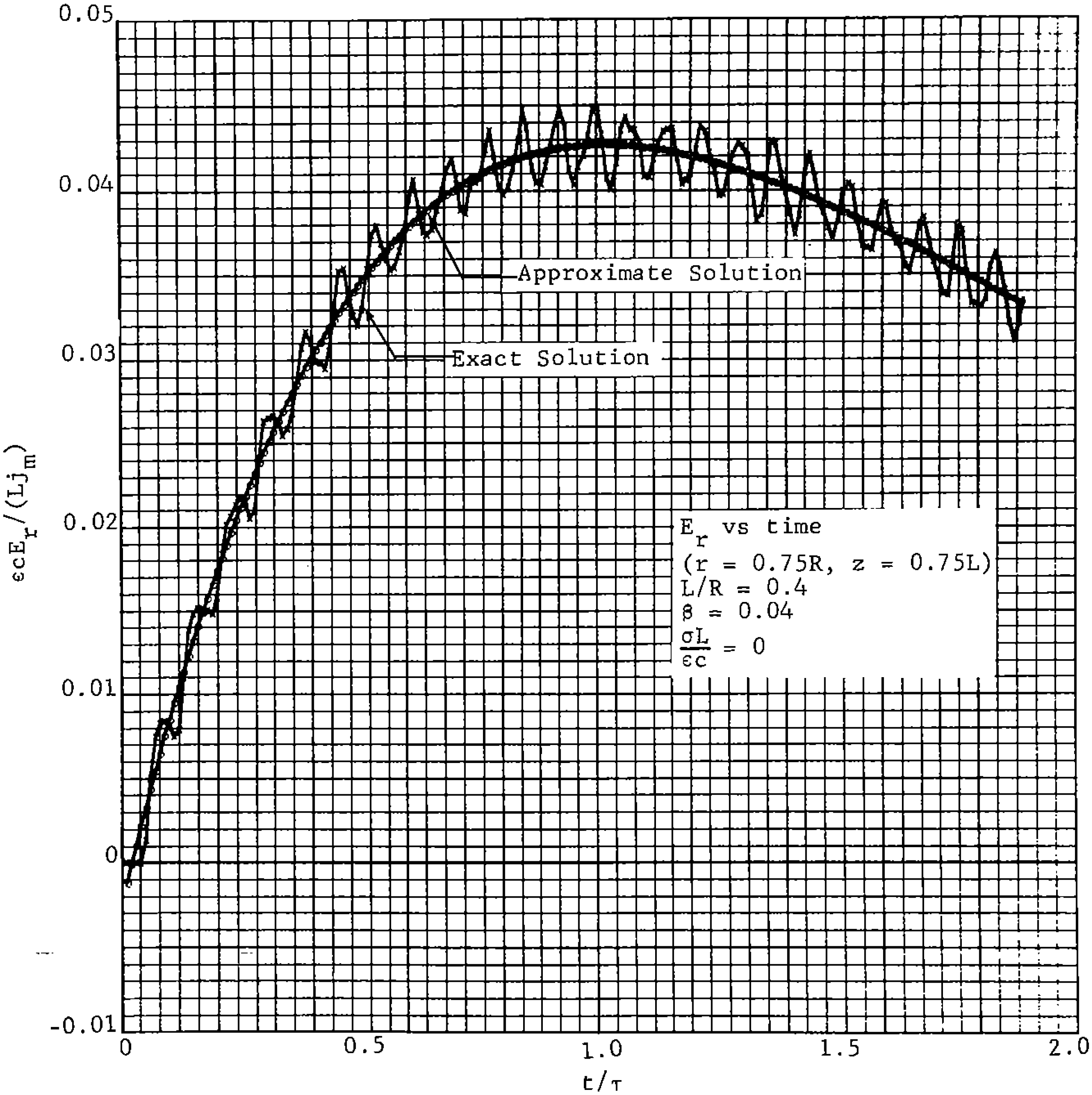

Fig. 15 Comparison between the approximate and exact temporal behavior of E_r for $\beta = 0.04$ and zero conductivity.

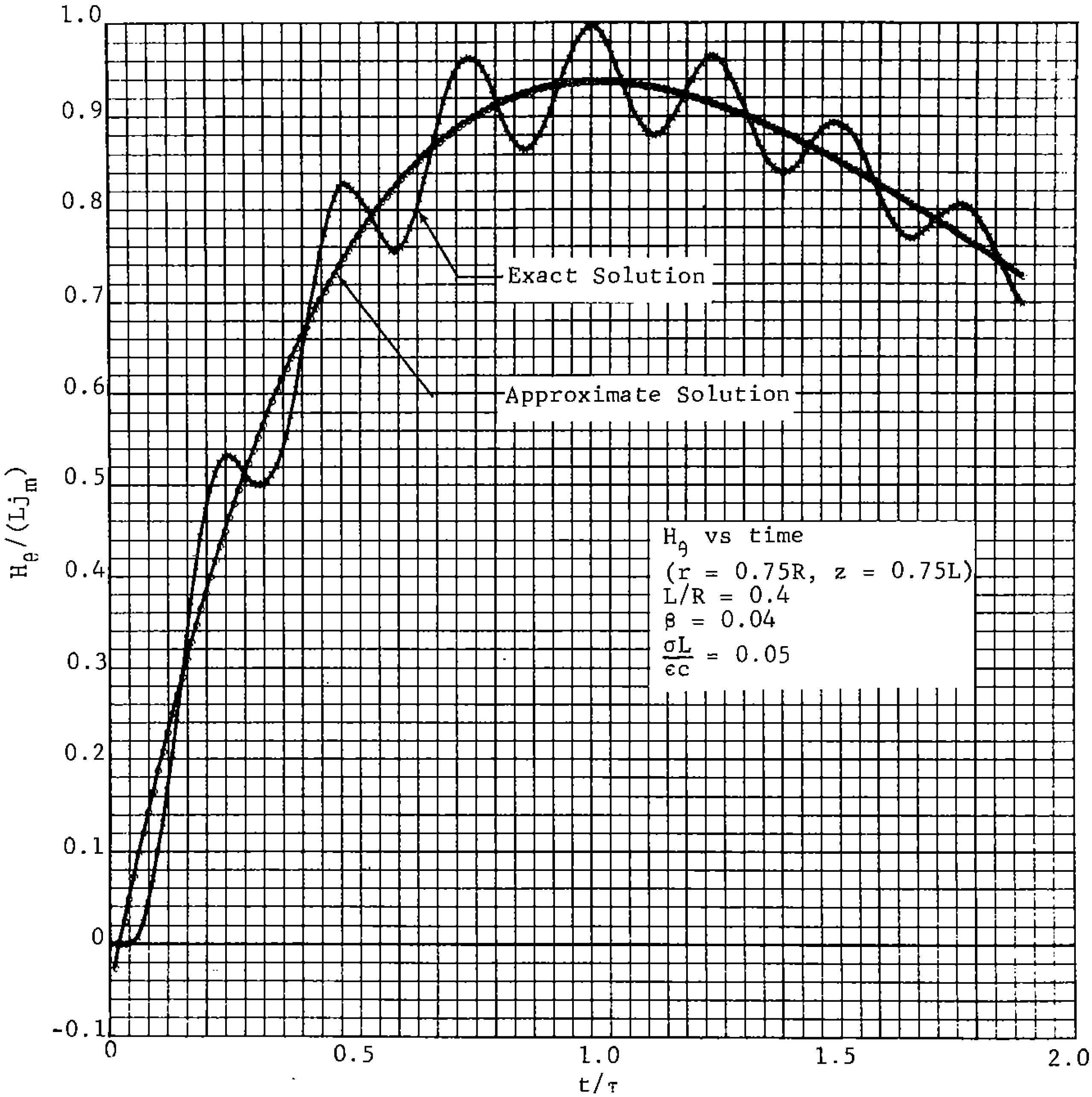

Fig. 16 Comparison between the approximate and exact temporal behavior of H_θ for $\beta = 0.04$ and $\sigma L/\epsilon c = 0.05$.

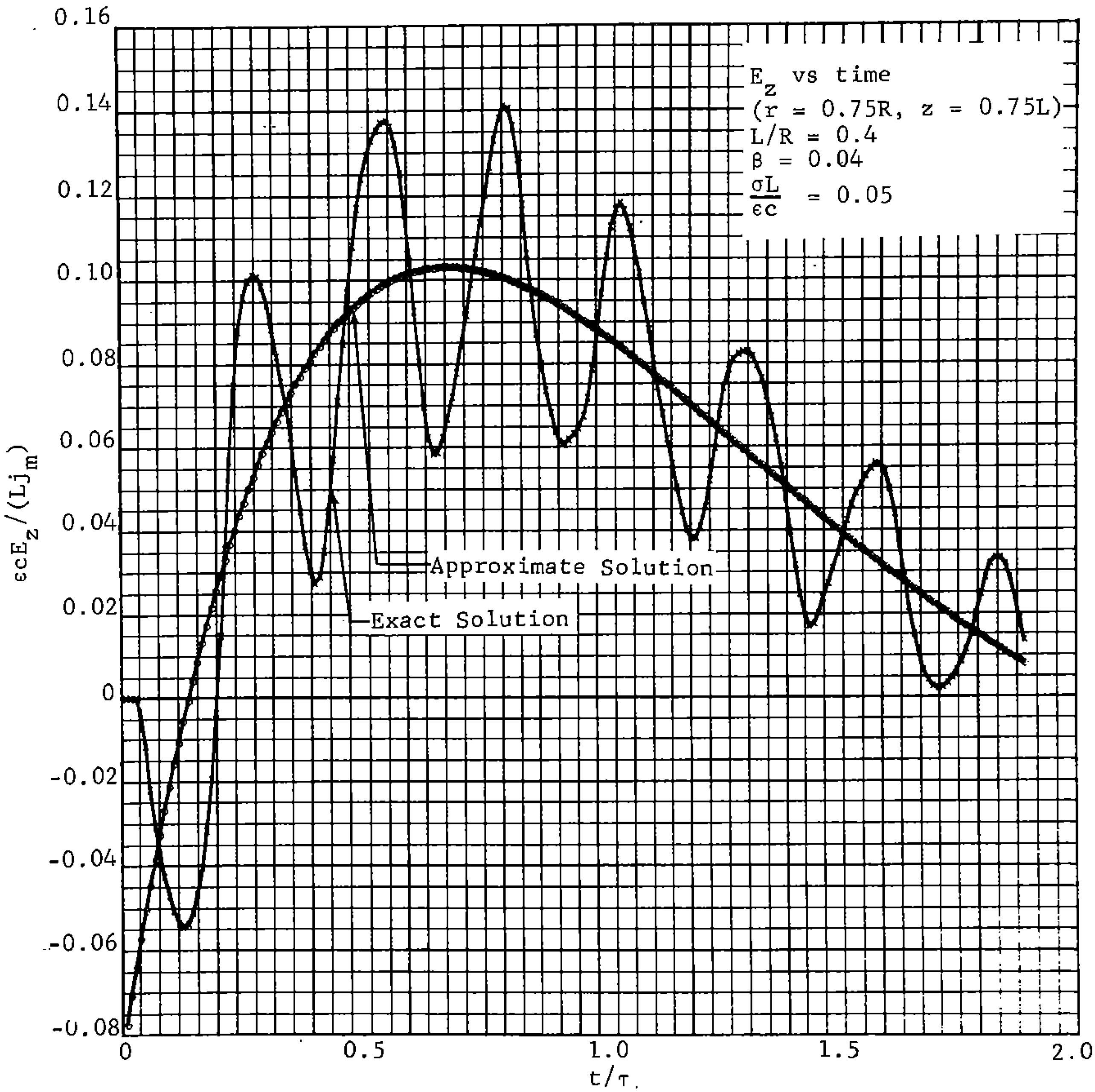

Fig. 17 Comparison between the approximate and exact temporal behavior of E_z for $\beta = 0.04$ and $\sigma L/\epsilon c = 0.05$.

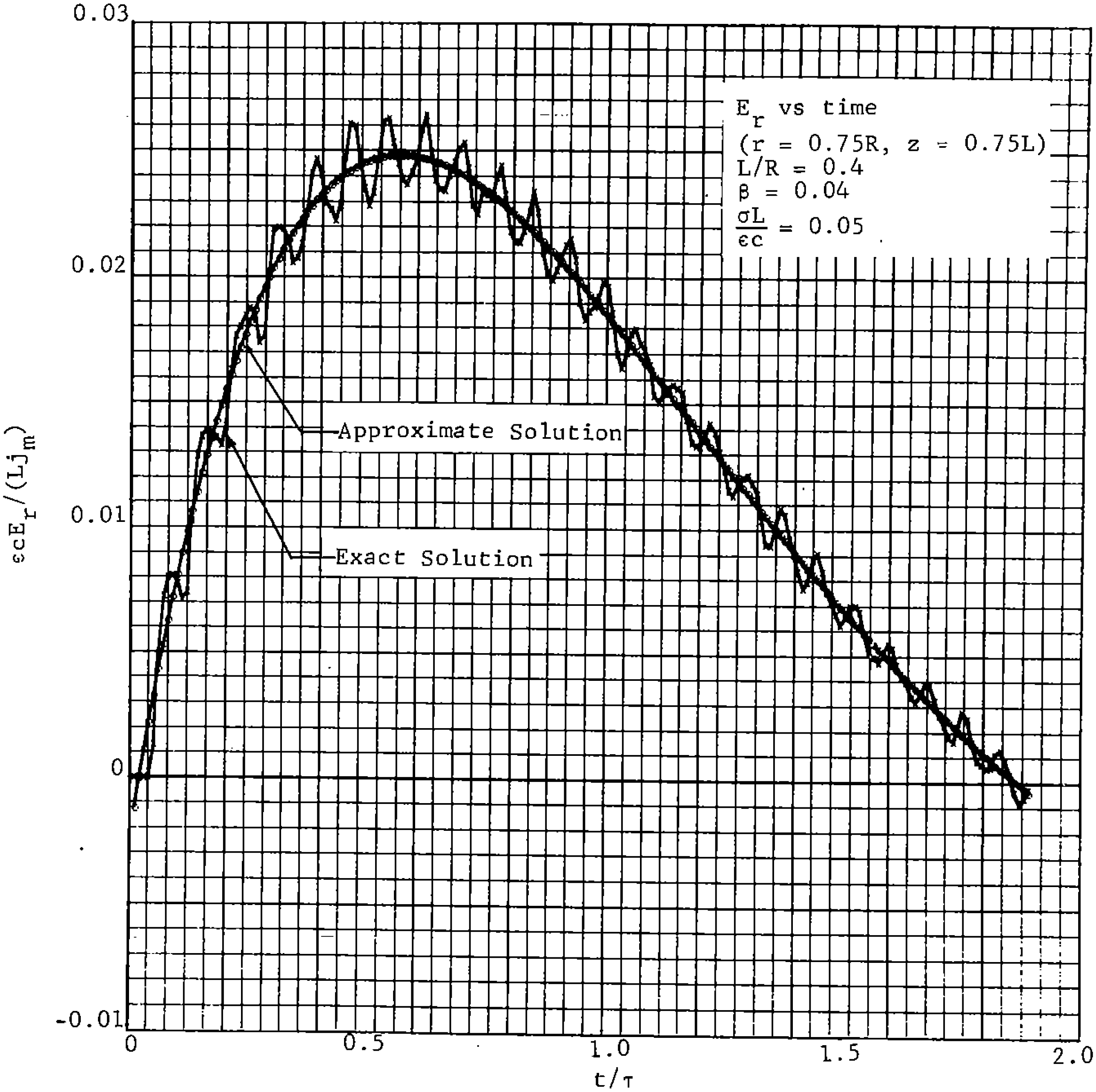

Fig. 18 Comparison between the approximate and exact temporal behavior of E_r for $\beta = 0.04$ and $\sigma L/\epsilon c = 0.05$.

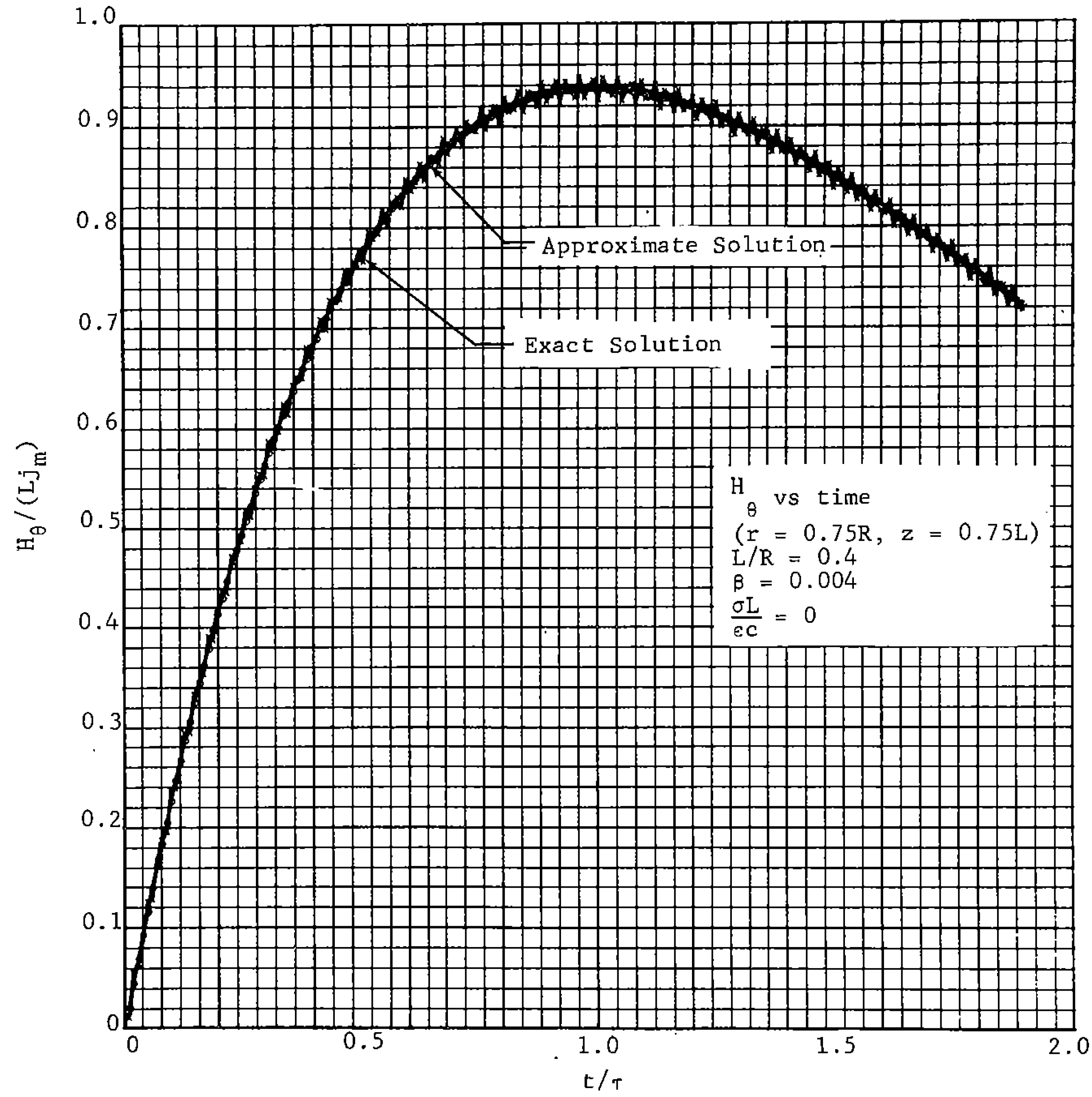

Fig. 19 Comparison between the approximate and exact temporal behavior of H_θ for $\beta = 0.004$ and zero conductivity.

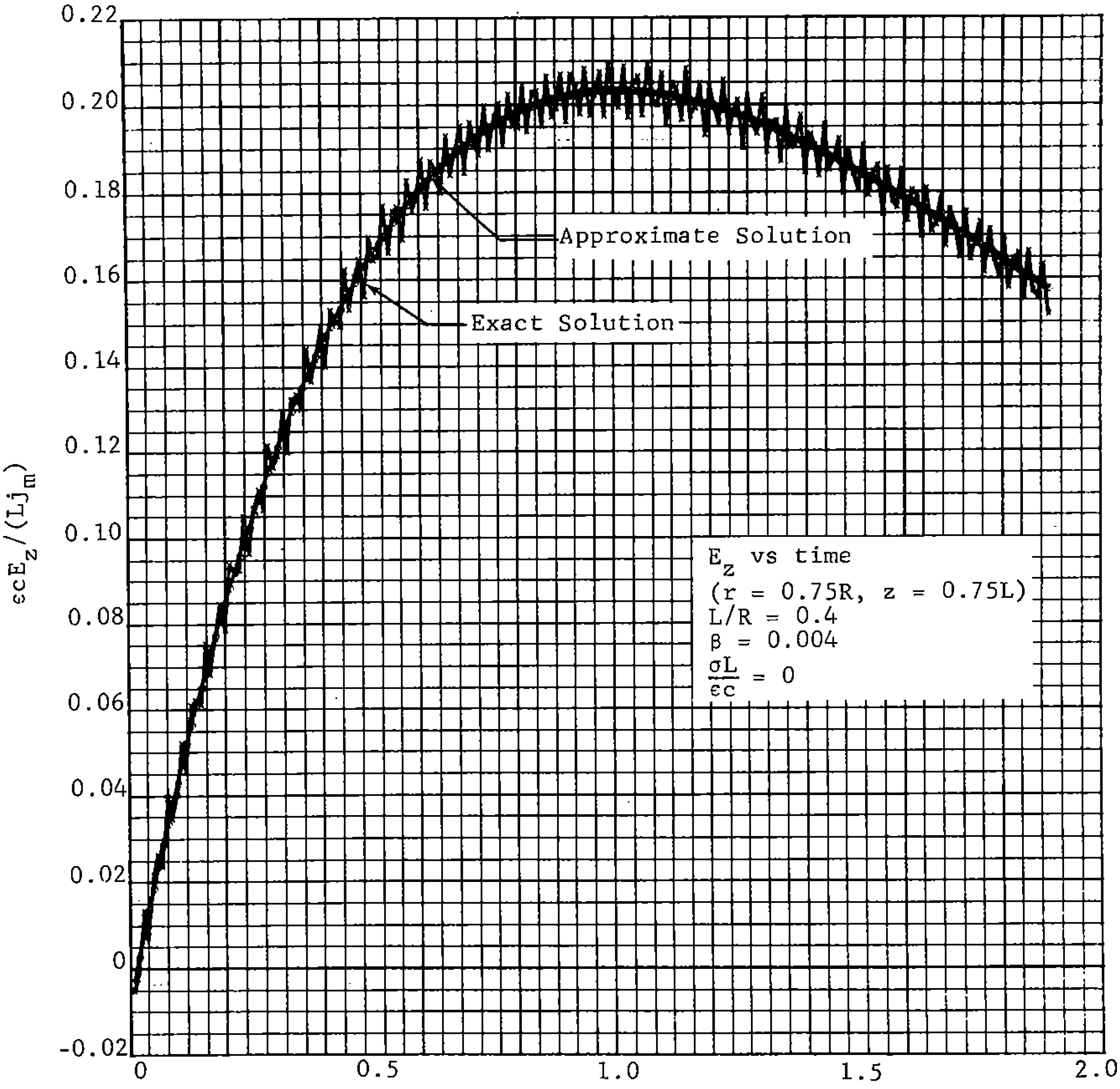

Fig. 20 Comparison between the approximate and exact temporal behavior of E_z for $\beta = 0.004$ and zero conductivity.

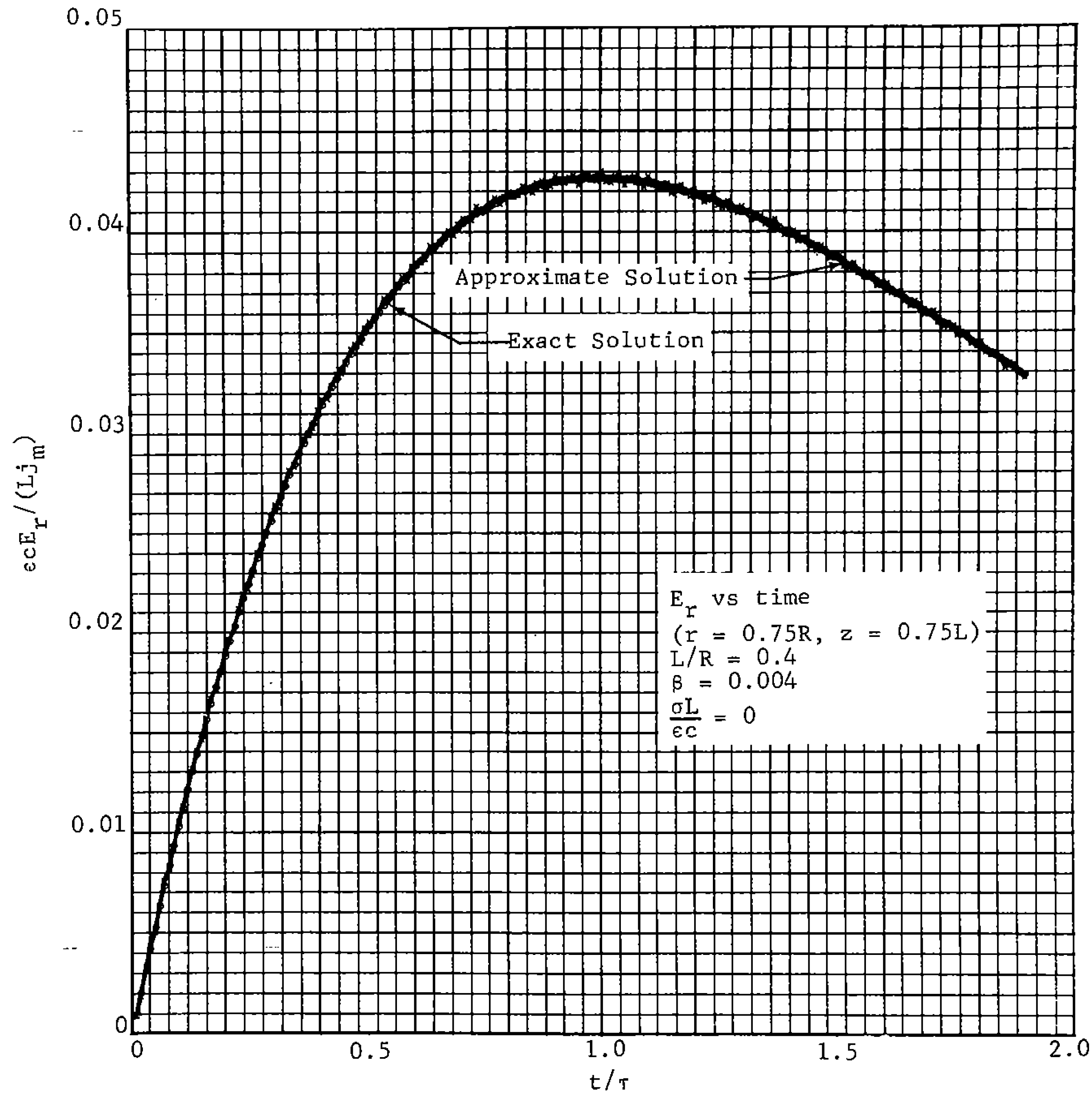

Fig. 21 Comparison between the approximate and exact temporal behavior of E_r for $\beta = 0.004$ and zero conductivity.

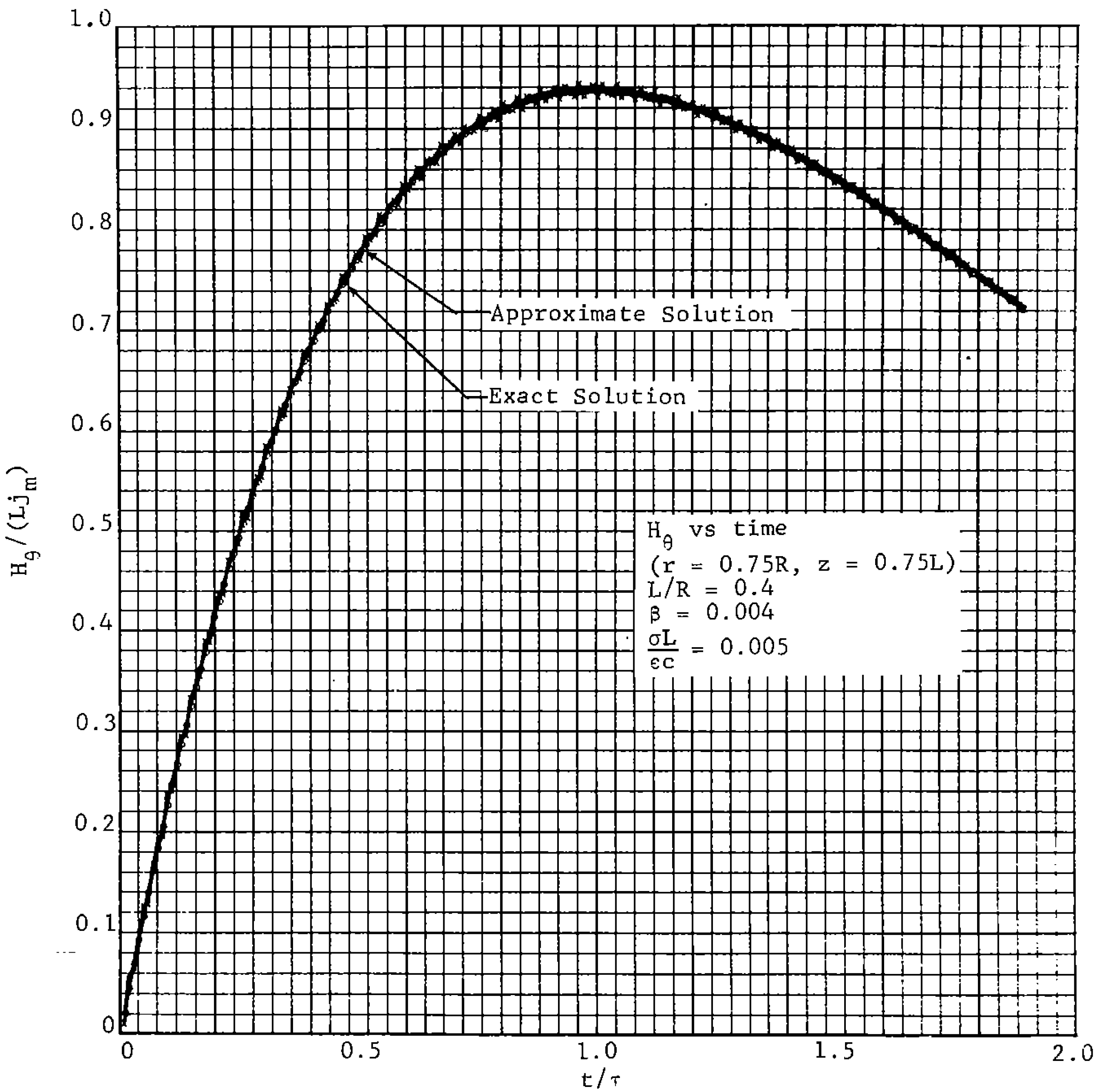

Fig. 22 Comparison between the approximate and exact temporal behavior of H_θ for $\beta = 0.004$ and $\sigma L/\epsilon c = 0.005$.

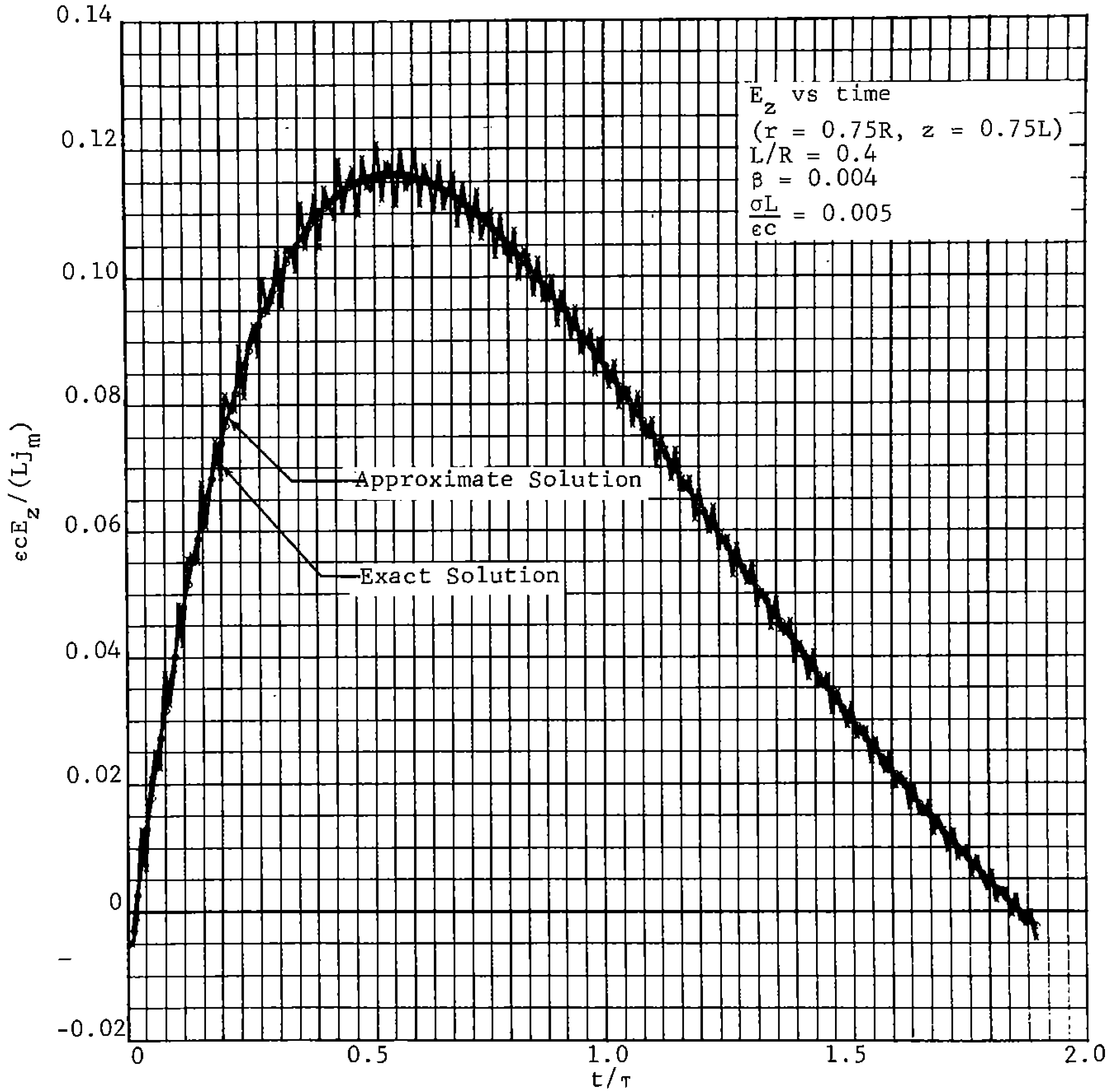

Fig. 23 Comparison between the approximate and exact temporal behavior of E_z for $\beta = 0.004$ and $\sigma L/\epsilon c = 0.005$.

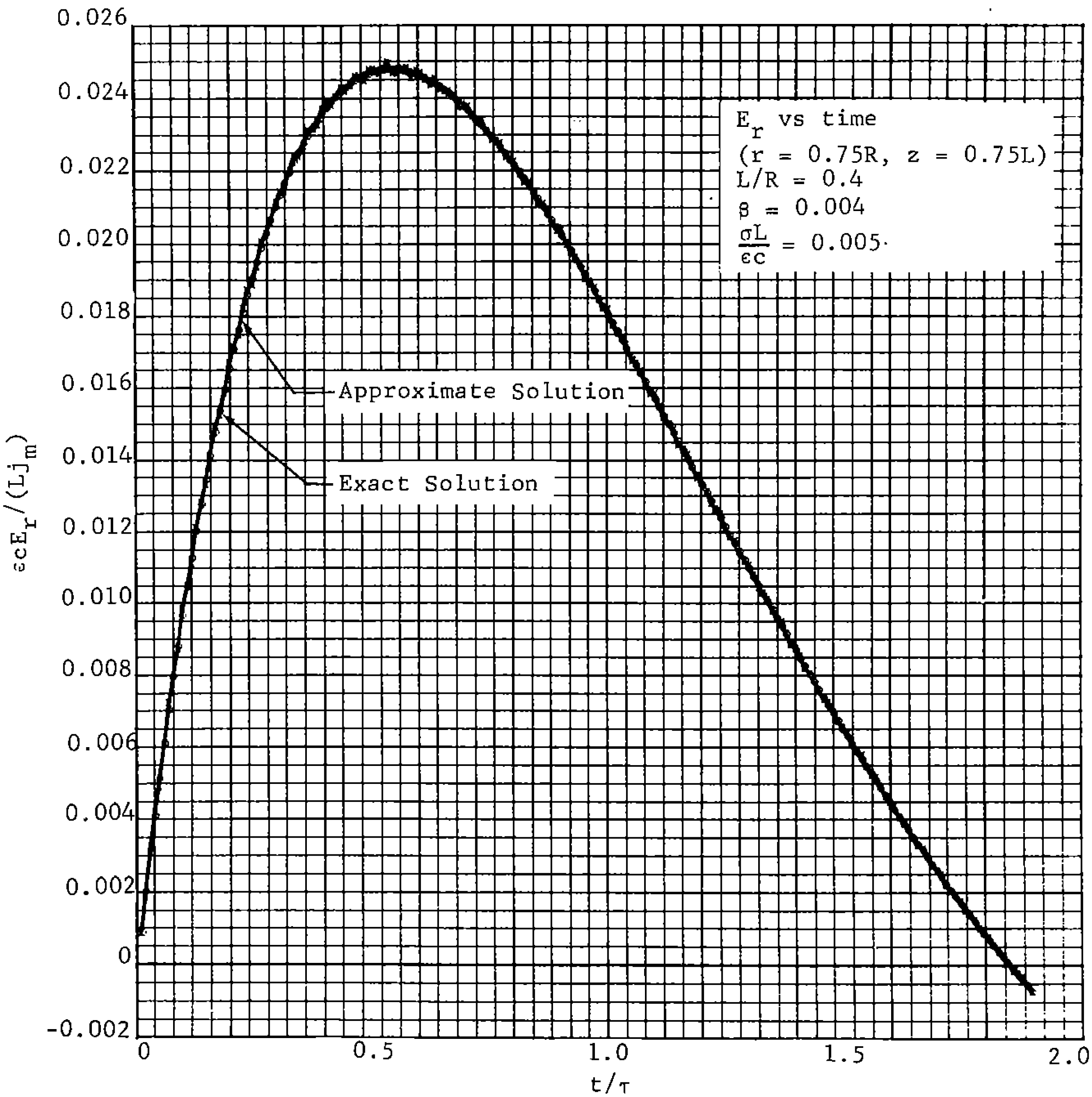

Fig. 24 Comparison between the approximate and exact temporal behavior of E_r for $\beta = 0.004$ and $\sigma L/\epsilon c = 0.005$.

SUMMARY

We have examined a perturbation technique applicable to obtaining approximations for the electromagnetic response for a simple model problem. The expansion is based on a nondimensionalized parameter β, equivalent to the ratio of one transit time across the cavity to the time required for the driving pulse to reach its maximum value. We presented the response expressions valid to order β and compared the approximation scheme results to the exact analytical results. The smaller the expansion parameter β, the more closely the approximation agrees with the exact response.

As previously mentioned, our resultant approximations appear to be providing "averages" of the results obtained from the exact analytical solutions. We note that the oscillatory behavior is completely lost and that there is no hope of recovery of this behavior from higher order terms. This shortcoming of the straightforward (pedestrian) expansion is the result of scaling time with respect to the radiation pulse, which has the effect of ignoring transient behavior occurring on a smaller time scale. In order to recover this oscillatory behavior it is apparently necessary to apply one of the more sophisticated methods of modern perturbation theory[3] such as the method of multiple scales.

Some of the motivation for this work stems from our desire to assess, by at least a semirigorous treatment, the implications of the often employed approximation $\nabla \times \vec{H} = \vec{j}$, where here $\vec{j}$ is simply the radiation-produced transport current. Examination of our results reveals that, within the restriction we have placed on the order of magnitude of the conductivity, the above approximation is equivalent to our zeroth-order magnetic field solution. By placing this approximation on a more rigorous foundation, corresponding expressions for the relevant electric field components are achieved.

We noted that the approximate scheme allowed for the "separation" of time and space and that to first-order the inclusion of conductivity results only in a modification of the time-dependent terms. We feel the usefulness of this paper is enhanced by presenting tables for the geometrically dependent terms. We rewrite Eqs. (33) through (35) as:

$$D_z(r, z, \lambda, t) \approx 2\left[f(t) - I_1(t)\right] G_1(r, z, \lambda) - 2\beta\left[\frac{\partial f(t)}{\partial t} - I_2(t)\right] G_2(r, z, \lambda) - 2\beta I_2(t) G_3(r, \lambda) , \tag{40}$$

$$D_r(r, z, \lambda, t) \approx -2\left[f(t) - I_1(t)\right] G_4(r, z, \lambda) - 2\beta\left[\frac{\partial f(t)}{\partial t} - I_2(t)\right] G_5(r, z, \lambda) , \tag{41}$$

and

$$H_\theta(r, z, \lambda, t) \approx 2f(t) G_6(r, \lambda) + 2\beta \frac{\partial f(t)}{\partial t} G_7(r, \lambda, z) , \tag{42}$$

where

$$I_2(t) = (\sigma/\beta)\left[f(t) - I_1(t)\right] , \tag{43}$$

and where the definitions of the functions G_1 through G_7 can be deduced by comparing the above equations with Eqs. (33) through (35). Presented in Appendix A are tables of these spatially dependent functions for various ratios of $\lambda = L/R$. These tables enable an individual to readily estimate the values of G_1 through G_7 which, when coupled with the time dependence of Eqs. (40) through (43), will provide an approximation for the fields in a specific cavity of interest.

In general, for electromagnetic cavity response problems in which the oscillatory behavior is of little interest and the average response allows separation of spatial and time dependence, the problem is greatly simplified. Basically, one must but solve, either numerically or analytically, several spatial boundary value problems for a specified cavity shape. The desired response is then simply obtained by weighting the solution to the above spatial boundary value problems by the appropriate time-dependent factors. To examine the response from various driving-current time-dependent pulse shapes becomes, therefore, a rather simple exercise.

We feel that the paramount value of this work is that it provides a foundation for more extensive investigations of a broader class of cavity response problems. Some of the problem areas of specific interest for which we anticipate an extension of this work include (a) the removal of the restriction on the order of magnitude of the conductivity, (b) the treatment of time-dependent radiation-induced conductivity, (c) the implementation of the method of multiple scales, and (d) the feasibility of applying these ideas to nonhomogeneous cavity problems.

REFERENCES

1. D. L. Mangan and G. J. Scrivner, Field Generation Within a Lossy Dielectric Cylinder Excited by a Radiation Pulse, SC-RR-71 0870, Sandia Laboratories, January 1972.

2. C. E. Baum, Electromagnetic Vulnerability of a Re-entry Vehicle to Gamma Radiation, AFWL RTD TDR-63-3088, Air Force Weapons Laboratory, December 1963.

3. A. H. Nayfeh, Perturbation Methods (in press), John Wiley & Sons, Inc., 1972.

Appendix A

FUNCTION TABLES

Appendix A

FUNCTION TABLES

Presented in this Appendix are tables of the seven functions G_1 through G_7 for values of $\lambda = L/R$ ranging from 0.2 to 2.0 in steps of 0.2. In using these tables, the reader is cautioned that nondimensionalized parameters are used. The seven functions are defined as

$$G_1(r, z, \lambda) = \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r)\left[\cosh \alpha_n \lambda z - \cosh \alpha_n \lambda(1 - z)\right]}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda) \sinh \alpha_n \lambda} , \tag{A.1}$$

$$G_2(r, z, \lambda) = \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r) \cosh \alpha_n \lambda z}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda) \sinh \alpha_n \lambda} , \tag{A.2}$$

$$G_3(r, \lambda) = \sum_{n=1}^{\infty} \frac{J_o(\alpha_n r)}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda)^2} , \tag{A.3}$$

$$G_4(r, z, \lambda) = \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)\left[\sinh \alpha_n \lambda z + \sinh \alpha_n \lambda(1 - z) - \sinh \alpha_n \lambda\right]}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda) \sinh \alpha_n \lambda} , \tag{A.4}$$

$$G_5(r, z, \lambda) = \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)\left[\sinh \alpha_n \lambda z - z \sinh \alpha_n \lambda\right]}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda) \sinh \alpha_n \lambda} , \tag{A.5}$$

$$G_6(r, \lambda) = \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda)} , \tag{A.6}$$

$$G_7(r, z, \lambda) = \sum_{n=1}^{\infty} \frac{J_1(\alpha_n r)\left[\cosh \alpha_n \lambda z - \cosh \alpha_n \lambda(1 - z) - \alpha_n \lambda z \sinh \alpha_n \lambda\right]}{\alpha_n J_1(\alpha_n)(\alpha_n \lambda)^2 \sinh \alpha_n \lambda} . \tag{A.7}$$

The tables presented are computer printouts. In some instances, "computed values of zero" are displayed. Specifically, one can consider the functions associated with E_r, which are G_4 and G_5. E_r vanishes at the end walls, or at $z/L = 0$ and $z/L = 1.0$. The values of G_4 and G_5 are not identically zero at $z/L = 1.0$ because of the numerical computational scheme; however, they are several orders of magnitude smaller than the values of G_4 and G_5 for $z/L \neq 1.0$.

$G_1(r, z, \lambda)$

L/R = .2		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-2.499E-01	-2.000E-01	-1.500E-01	-1.000E-01	-5.000E-02	2.192E-15	5.000E-02	1.000E-01	1.500E-01	2.000E-01	2.499E-01
	.1	-2.500E-01	-2.000E-01	-1.500E-01	-1.000E-01	-5.000E-02	2.077E-15	5.000E-02	1.000E-01	1.500E-01	2.000E-01	2.500E-01
	.2	-2.500E-01	-2.000E-01	-1.500E-01	-1.000E-01	-5.000E-02	1.628E-15	5.000E-02	1.000E-01	1.500E-01	2.000E-01	2.500E-01
	.3	-2.500E-01	-2.000E-01	-1.500E-01	-1.000E-01	-5.000E-02	9.904E-16	5.000E-02	1.000E-01	1.500E-01	2.000E-01	2.500E-01
	.4	-2.500E-01	-2.000E-01	-1.500E-01	-9.998E-02	-4.999E-02	4.118E-16	4.999E-02	9.998E-02	1.500E-01	2.000E-01	2.500E-01
	.5	-2.499E-01	-1.999E-01	-1.499E-01	-9.993E-02	-4.997E-02	-1.642E-16	4.997E-02	9.993E-02	1.499E-01	1.999E-01	2.499E-01
	.6	-2.495E-01	-1.995E-01	-1.496E-01	-9.971E-02	-4.985E-02	-7.414E-16	4.985E-02	9.971E-02	1.496E-01	1.995E-01	2.495E-01
	.7	-2.478E-01	-1.979E-01	-1.482E-01	-9.872E-02	-4.933E-02	-1.036E-15	4.933E-02	9.872E-02	1.482E-01	1.979E-01	2.478E-01
	.8	-2.402E-01	-1.907E-01	-1.421E-01	-9.424E-02	-4.697E-02	-1.073E-15	4.697E-02	9.424E-02	1.421E-01	1.907E-01	2.402E-01
	.9	-2.054E-01	-1.576E-01	-1.141E-01	-7.408E-02	-3.644E-02	-8.210E-16	3.644E-02	7.408E-02	1.141E-01	1.576E-01	2.054E-01
	1.0	2.063E-05	-1.062E-06	-1.604E-06	-1.150E-06	-5.804E-07	-1.200E-20	5.804E-07	1.150E-06	1.604E-06	1.062E-06	-2.063E-05

$G_2(r, z, \lambda)$

L/R = .2		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	3.042E+00	3.044E+00	3.052E+00	3.064E+00	3.082E+00	3.104E+00	3.132E+00	3.164E+00	3.202E+00	3.244E+00	3.292E+00
	.1	3.010E+00	3.013E+00	3.020E+00	3.033E+00	3.050E+00	3.073E+00	3.100E+00	3.133E+00	3.170E+00	3.213E+00	3.260E+00
	.2	2.917E+00	2.919E+00	2.927E+00	2.939E+00	2.957E+00	2.979E+00	3.007E+00	3.039E+00	3.077E+00	3.119E+00	3.167E+00
	.3	2.760E+00	2.763E+00	2.770E+00	2.783E+00	2.800E+00	2.823E+00	2.850E+00	2.883E+00	2.920E+00	2.963E+00	3.010E+00
	.4	2.542E+00	2.544E+00	2.552E+00	2.564E+00	2.582E+00	2.604E+00	2.632E+00	2.664E+00	2.702E+00	2.744E+00	2.792E+00
	.5	2.260E+00	2.263E+00	2.270E+00	2.283E+00	2.300E+00	2.323E+00	2.350E+00	2.383E+00	2.420E+00	2.463E+00	2.510E+00
	.6	1.917E+00	1.919E+00	1.927E+00	1.939E+00	1.957E+00	1.979E+00	2.007E+00	2.039E+00	2.076E+00	2.119E+00	2.166E+00
	.7	1.512E+00	1.514E+00	1.521E+00	1.534E+00	1.551E+00	1.573E+00	1.600E+00	1.632E+00	1.670E+00	1.712E+00	1.759E+00
	.8	1.047E+00	1.049E+00	1.056E+00	1.067E+00	1.083E+00	1.104E+00	1.130E+00	1.161E+00	1.198E+00	1.239E+00	1.287E+00
	.9	5.316E-01	5.332E-01	5.380E-01	5.463E-01	5.581E-01	5.741E-01	5.946E-01	6.203E-01	6.521E-01	6.908E-01	7.369E-01
	1.0	1.105E-05	1.108E-05	1.116E-05	1.130E-05	1.150E-05	1.176E-05	1.208E-05	1.245E-05	1.277E-05	1.214E-05	-9.572E-06

$G_3(r, \lambda)$

L/R = .2		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00	3.125E+00
	.1	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00	3.094E+00
	.2	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00	3.000E+00
	.3	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00	2.844E+00
	.4	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00	2.625E+00
	.5	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00	2.344E+00
	.6	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00	2.000E+00
	.7	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00	1.594E+00
	.8	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00
	.9	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01	5.938E-01
	1.0	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05	1.132E-05

$G_4(r, z, \lambda)$

L/R = .2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	5.800E-16	4.115E-06	3.980E-06	3.877E-06	3.812E-06	3.790E-06	3.812E-06	3.877E-06	3.980E-06	4.115E-06	-1.295E-15
	.2	7.428E-16	-3.355E-06	-3.804E-06	-4.150E-06	-4.368E-06	-4.443E-06	-4.368E-06	-4.150E-06	-3.804E-06	-3.355E-06	-1.291E-15
	.3	2.107E-16	6.476E-07	-7.931E-07	-1.954E-06	-2.706E-06	-2.966E-06	-2.706E-06	-1.954E-06	-7.931E-07	6.475E-07	-1.446E-15
	.4	1.578E-16	-9.095E-06	-1.568E-05	-2.092E-05	-2.430E-05	-2.546E-05	-2.430E-05	-2.092E-05	-1.568E-05	-9.095E-06	-1.852E-15
r/R	.5	-7.416E-16	-3.101E-05	-6.033E-05	-8.359E-05	-9.851E-05	-1.037E-04	-9.851E-05	-8.359E-05	-6.033E-05	-3.101E-05	-2.421E-15
	.6	-1.889E-15	-1.450E-04	-2.746E-04	-3.774E-04	-4.434E-04	-4.662E-04	-4.434E-04	-3.774E-04	-2.746E-04	-1.450E-04	-3.369E-15
	.7	-3.141E-15	-6.423E-04	-1.223E-03	-1.683E-03	-1.979E-03	-2.081E-03	-1.979E-03	-1.683E-03	-1.223E-03	-6.423E-04	-5.674E-15
	.8	-3.934E-15	-2.911E-03	-5.535E-03	-7.616E-03	-8.951E-03	-9.411E-03	-8.951E-03	-7.616E-03	-5.535E-03	-2.911E-03	-6.846E-15
	.9	-5.099E-15	-1.341E-02	-2.538E-02	-3.472E-02	-4.062E-02	-4.264E-02	-4.062E-02	-3.472E-02	-2.538E-02	-1.341E-02	-9.260E-15
	1.0	-6.064E-15	-8.693E-02	-1.312E-01	-1.581E-01	-1.730E-01	-1.778E-01	-1.730E-01	-1.581E-01	-1.312E-01	-8.693E-02	-1.875E-14

$G_5(r, z, \lambda)$

L/R = .2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	3.572E-07	7.203E-07	1.095E-06	1.485E-06	1.895E-06	2.327E-06	2.762E-06	3.260E-06	3.758E-06	-1.046E-15
	.2	0.	-5.218E-07	-1.022E-06	-1.483E-06	-1.886E-06	-2.221E-06	-2.482E-06	-2.668E-06	-2.782E-06	-2.834E-06	-8.014E-16
	.3	0.	-5.931E-07	-1.103E-06	-1.457E-06	-1.595E-06	-1.483E-06	-1.111E-06	-4.974E-07	3.104E-07	1.241E-06	-9.986E-16
	.4	0.	-3.847E-06	-7.332E-06	-1.013E-05	-1.198E-05	-1.273E-05	-1.231E-05	-1.079E-05	-8.351E-06	-5.248E-06	-1.557E-15
r/R	.5	0.	-1.608E-05	-3.058E-05	-4.206E-05	-4.938E-05	-5.183E-05	-4.913E-05	-4.153E-05	-2.976E-05	-1.493E-05	-2.419E-15
	.6	0.	-7.188E-05	-1.368E-04	-1.883E-04	-2.215E-04	-2.331E-04	-2.219E-04	-1.891E-04	-1.378E-04	-7.315E-05	-3.701E-15
	.7	0.	-3.202E-04	-6.094E-04	-8.396E-04	-9.882E-04	-1.040E-03	-9.909E-04	-8.438E-04	-6.133E-04	-3.221E-04	-6.118E-15
	.8	0.	-1.425E-03	-2.718E-03	-3.759E-03	-4.445E-03	-4.706E-03	-4.506E-03	-3.858E-03	-2.817E-03	-1.486E-03	-7.259E-15
	.9	0.	-6.028E-03	-1.161E-02	-1.629E-02	-1.966E-02	-2.132E-02	-2.097E-02	-1.843E-02	-1.378E-02	-7.385E-03	-9.076E-15
	1.0	0.	-2.095E-02	-4.115E-02	-5.982E-02	-7.609E-02	-8.890E-02	-9.693E-02	-9.830E-02	-9.000E-02	-6.598E-02	-1.757E-14

$G_6(r, \lambda)$

L/R = .2	Z/L: 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
.2	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01
.3	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01
.4	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01
.5	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01	6.250E-01
.6	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01
.7	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01	8.750E-01
.8	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
.9	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00	1.125E+00
1.0	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00	1.249E+00

$G_7(r, z, \lambda)$

L/R = .2	Z/L: 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02	-6.250E-02
.2	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01	-1.250E-01
.3	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01	-1.875E-01
.4	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01	-2.500E-01
.5	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01	-3.125E-01
.6	-3.749E-01	-3.749E-01	-3.749E-01	-3.749E-01	-3.750E-01	-3.750E-01	-3.750E-01	-3.751E-01	-3.751E-01	-3.751E-01	-3.751E-01
.7	-4.368E-01	-4.369E-01	-4.370E-01	-4.371E-01	-4.373E-01	-4.375E-01	-4.377E-01	-4.379E-01	-4.380E-01	-4.381E-01	-4.382E-01
.8	-4.970E-01	-4.972E-01	-4.976E-01	-4.982E-01	-4.991E-01	-5.000E-01	-5.009E-01	-5.018E-01	-5.024E-01	-5.029E-01	-5.030E-01
.9	-5.488E-01	-5.495E-01	-5.515E-01	-5.545E-01	-5.583E-01	-5.625E-01	-5.667E-01	-5.705E-01	-5.735E-01	-5.759E-01	-5.762E-01
1.0	-5.593E-01	-5.643E-01	-5.754E-01	-5.900E-01	-6.067E-01	-6.243E-01	-6.419E-01	-6.565E-01	-6.731E-01	-6.842E-01	-6.893E-01

$G_1(r, z, \lambda)$

L/R = .4		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-2.494E-01	-1.995E-01	-1.496E-01	-9.968E-02	-4.983E-02	-4.601E-15	4.983E-02	9.968E-02	1.496E-01	1.995E-01	2.494E-01
	.1	-2.494E-01	-1.994E-01	-1.495E-01	-9.963E-02	-4.981E-02	-4.567E-15	4.981E-02	9.963E-02	1.495E-01	1.994E-01	2.494E-01
	.2	-2.491E-01	-1.991E-01	-1.492E-01	-9.945E-02	-4.971E-02	-4.479E-15	4.971E-02	9.945E-02	1.492E-01	1.991E-01	2.491E-01
	.3	-2.484E-01	-1.985E-01	-1.487E-01	-9.906E-02	-4.950E-02	-4.316E-15	4.950E-02	9.906E-02	1.487E-01	1.985E-01	2.484E-01
	.4	-2.470E-01	-1.972E-01	-1.476E-01	-9.825E-02	-4.908E-02	-4.038E-15	4.908E-02	9.825E-02	1.476E-01	1.972E-01	2.470E-01
	.5	-2.442E-01	-1.945E-01	-1.453E-01	-9.661E-02	-4.822E-02	-3.637E-15	4.822E-02	9.661E-02	1.453E-01	1.945E-01	2.442E-01
	.6	-2.385E-01	-1.891E-01	-1.407E-01	-9.327E-02	-4.646E-02	-3.113E-15	4.646E-02	9.327E-02	1.407E-01	1.891E-01	2.385E-01
	.7	-2.268E-01	-1.780E-01	-1.313E-01	-8.642E-02	-4.287E-02	-2.460E-15	4.287E-02	8.642E-02	1.313E-01	1.780E-01	2.268E-01
	.8	-2.024E-01	-1.549E-01	-1.118E-01	-7.240E-02	-3.556E-02	-1.717E-15	3.556E-02	7.240E-02	1.118E-01	1.549E-01	2.024E-01
	.9	-1.500E-01	-1.059E-01	-7.191E-02	-4.476E-02	-2.151E-02	-8.965E-16	2.151E-02	4.476E-02	7.191E-02	1.059E-01	1.500E-01
	1.0	9.439E-06	-1.698E-06	-1.257E-06	-7.997E-07	-3.884E-07	-1.834E-20	3.884E-07	7.997E-07	1.257E-06	1.698E-06	-9.439E-06

$G_2(r, z, \lambda)$

L/R = .4		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	6.982E-01	7.007E-01	7.081E-01	7.206E-01	7.380E-01	7.604E-01	7.678E-01	8.203E-01	8.577E-01	9.002E-01	9.476E-01
	.1	6.904E-01	6.929E-01	7.004E-01	7.128E-01	7.302E-01	7.526E-01	7.800E-01	8.124E-01	8.499E-01	8.923E-01	9.398E-01
	.2	6.671E-01	6.696E-01	6.770E-01	6.894E-01	7.068E-01	7.292E-01	7.565E-01	7.869E-01	8.263E-01	8.687E-01	9.162E-01
	.3	6.284E-01	6.309E-01	6.383E-01	6.506E-01	6.679E-01	6.901E-01	7.174E-01	7.496E-01	7.870E-01	8.293E-01	8.768E-01
	.4	5.744E-01	5.768E-01	5.841E-01	5.963E-01	6.134E-01	6.354E-01	6.625E-01	6.945E-01	7.317E-01	7.740E-01	8.214E-01
	.5	5.055E-01	5.078E-01	5.149E-01	5.268E-01	5.435E-01	5.651E-01	5.917E-01	6.234E-01	6.603E-01	7.024E-01	7.497E-01
	.6	4.223E-01	4.246E-01	4.313E-01	4.426E-01	4.585E-01	4.792E-01	5.050E-01	5.359E-01	5.720E-01	6.137E-01	6.609E-01
	.7	3.264E-01	3.284E-01	3.344E-01	3.445E-01	3.589E-01	3.779E-01	4.018E-01	4.309E-01	4.657E-01	5.064E-01	5.533E-01
	.8	2.205E-01	2.220E-01	2.267E-01	2.346E-01	2.461E-01	2.616E-01	2.817E-01	3.070E-01	3.384E-01	3.769E-01	4.229E-01
	.9	1.092E-01	1.101E-01	1.127E-01	1.172E-01	1.238E-01	1.329E-01	1.453E-01	1.619E-01	1.846E-01	2.160E-01	2.592E-01
	1.0	2.327E-06	2.343E-06	2.391E-06	2.474E-06	2.597E-06	2.764E-06	2.985E-06	3.274E-06	3.648E-06	4.041E-06	-7.113E-06

$G_3(r, \lambda)$

L/R = .4		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01	7.813E-01
	.1	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01	7.734E-01
	.2	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01	7.500E-01
	.3	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01	7.109E-01
	.4	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01	6.563E-01
	.5	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01	5.859E-01
	.6	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01
	.7	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01	3.984E-01
	.8	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01
	.9	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01
	1.0	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06	2.831E-06

$G_4(r, z, \lambda)$

L/R = .4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-8.113E-16	-6.906E-05	-1.333E-04	-1.842E-04	-2.169E-04	-2.282E-04	-2.169E-04	-1.842E-04	-1.333E-04	-6.906E-05	8.623E-17
	.2	-1.552E-15	-1.784E-04	-3.380E-04	-4.647E-04	-5.460E-04	-5.740E-04	-5.460E-04	-4.647E-04	-3.380E-04	-1.784E-04	3.967E-16
	.3	-1.979E-15	-3.694E-04	-7.037E-04	-9.690E-04	-1.139E-03	-1.198E-03	-1.139E-03	-9.690E-04	-7.037E-04	-3.694E-04	3.651E-16
	.4	-2.566E-15	-7.548E-04	-1.435E-03	-1.975E-03	-2.321E-03	-2.440E-03	-2.321E-03	-1.975E-03	-1.435E-03	-7.548E-04	-8.247E-16
	.5	-2.715E-15	-1.533E-03	-2.916E-03	-4.014E-03	-4.718E-03	-4.961E-03	-4.718E-03	-4.014E-03	-2.916E-03	-1.533E-03	-1.009E-15
	.6	-2.587E-15	-3.140E-03	-5.971E-03	-8.216E-03	-9.656E-03	-1.015E-02	-9.656E-03	-8.216E-03	-5.971E-03	-3.140E-03	-1.071E-15
	.7	-2.711E-15	-6.482E-03	-1.232E-02	-1.693E-02	-1.988E-02	-2.090E-02	-1.988E-02	-1.693E-02	-1.232E-02	-6.482E-03	-2.299E-15
	.8	-2.900E-15	-1.358E-02	-2.570E-02	-3.515E-02	-4.112E-02	-4.315E-02	-4.112E-02	-3.515E-02	-2.570E-02	-1.358E-02	-2.818E-15
	.9	-3.105E-15	-2.989E-02	-5.521E-02	-7.365E-02	-8.469E-02	-8.835E-02	-8.469E-02	-7.365E-02	-5.521E-02	-2.989E-02	-4.214E-15
	1.0	-3.267E-15	-8.529E-02	-1.277E-01	-1.533E-01	-1.674E-01	-1.719E-01	-1.674E-01	-1.533E-01	-1.277E-01	-8.529E-02	-1.308E-14

$G_5(r, z, \lambda)$

L/R = .4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-3.534E-05	-6.722E-05	-9.248E-05	-1.086E-04	-1.141E-04	-1.083E-04	-9.174E-05	-6.605E-05	-3.371E-05	3.860E-16
	.2	0.	-8.851E-05	-1.684E-04	-2.319E-04	-2.727E-04	-2.870E-04	-2.733E-04	-2.328E-04	-1.696E-04	-8.930E-05	1.066E-15
	.3	0.	-1.848E-04	-3.516E-04	-4.841E-04	-5.694E-04	-5.990E-04	-5.700E-04	-4.849E-04	-3.521E-04	-1.846E-04	1.421E-15
	.4	0.	-3.753E-04	-7.143E-04	-9.843E-04	-1.159E-03	-1.220E-03	-1.162E-03	-9.903E-04	-7.205E-04	-3.795E-04	6.952E-16
	.5	0.	-7.590E-04	-1.446E-03	-1.995E-03	-2.351E-03	-2.481E-03	-2.367E-03	-2.019E-03	-1.470E-03	-7.739E-04	1.000E-15
	.6	0.	-1.536E-03	-2.930E-03	-4.052E-03	-4.794E-03	-5.076E-03	-4.862E-03	-4.163E-03	-3.041E-03	-1.605E-03	1.392E-15
	.7	0.	-3.088E-03	-5.911E-03	-8.218E-03	-9.789E-03	-1.045E-02	-1.009E-02	-8.712E-03	-6.406E-03	-3.394E-03	6.267E-16
	.8	0.	-6.088E-03	-1.172E-02	-1.647E-02	-1.938E-02	-2.158E-02	-2.124E-02	-1.869E-02	-1.398E-02	-7.497E-03	4.199E-16
	.9	0.	-1.150E-02	-2.236E-02	-3.191E-02	-3.944E-02	-4.418E-02	-4.525E-02	-4.174E-02	-3.284E-02	-1.839E-02	-7.136E-16
	1.0	0.	-2.014E-02	-3.960E-02	-5.763E-02	-7.341E-02	-8.596E-02	-9.399E-02	-9.567E-02	-8.806E-02	-6.514E-02	-9.317E-15

$G_6(r, \lambda)$

L/R = .4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02
	.2	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.3	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01
	.4	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01
	.5	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01	3.125E-01
	.6	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01
	.7	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01	4.375E-01
	.8	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01	5.000E-01
	.9	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01	5.625E-01
	1.0	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01	6.243E-01

$G_7(r, z, \lambda)$

L/R = .4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-3.118E-02	-3.118E-02	-3.119E-02	-3.121E-02	-3.123E-02	-3.125E-02	-3.127E-02	-3.129E-02	-3.131E-02	-3.132E-02	-3.132E-02
	.2	-6.232E-02	-6.233E-02	-6.235E-02	-6.239E-02	-6.244E-02	-6.250E-02	-6.256E-02	-6.261E-02	-6.265E-02	-6.267E-02	-6.268E-02
	.3	-9.337E-02	-9.339E-02	-9.344E-02	-9.353E-02	-9.363E-02	-9.375E-02	-9.387E-02	-9.397E-02	-9.406E-02	-9.411E-02	-9.413E-02
	.4	-1.242E-01	-1.243E-01	-1.244E-01	-1.245E-01	-1.248E-01	-1.250E-01	-1.252E-01	-1.255E-01	-1.256E-01	-1.257E-01	-1.258E-01
	.5	-1.547E-01	-1.547E-01	-1.550E-01	-1.553E-01	-1.558E-01	-1.562E-01	-1.567E-01	-1.572E-01	-1.575E-01	-1.578E-01	-1.578E-01
	.6	-1.843E-01	-1.844E-01	-1.849E-01	-1.856E-01	-1.865E-01	-1.875E-01	-1.885E-01	-1.894E-01	-1.901E-01	-1.906E-01	-1.907E-01
	.7	-2.121E-01	-2.124E-01	-2.134E-01	-2.148E-01	-2.167E-01	-2.187E-01	-2.208E-01	-2.227E-01	-2.241E-01	-2.251E-01	-2.254E-01
	.8	-2.362E-01	-2.369E-01	-2.388E-01	-2.419E-01	-2.458E-01	-2.500E-01	-2.542E-01	-2.581E-01	-2.612E-01	-2.631E-01	-2.638E-01
	.9	-2.522E-01	-2.537E-01	-2.581E-01	-2.646E-01	-2.725E-01	-2.813E-01	-2.900E-01	-2.979E-01	-3.044E-01	-3.088E-01	-3.103E-01
	1.0	-2.490E-01	-2.540E-01	-2.648E-01	-2.790E-01	-2.951E-01	-3.121E-01	-3.292E-01	-3.453E-01	-3.595E-01	-3.703E-01	-3.753E-01

$G_1(r, z, \lambda)$

L/R = .6	r/R	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	-2.440E-01	-1.943E-01	-1.451E-01	-9.646E-02	-4.814E-02	3.502E-16	4.814E-02	9.646E-02	1.451E-01	1.943E-01	2.440E-01
	.1	-2.436E-01	-1.939E-01	-1.448E-01	-9.621E-02	-4.801E-02	3.364E-16	4.801E-02	9.621E-02	1.448E-01	1.939E-01	2.436E-01
	.2	-2.422E-01	-1.926E-01	-1.437E-01	-9.542E-02	-4.759E-02	2.926E-16	4.759E-02	9.542E-02	1.437E-01	1.926E-01	2.422E-01
	.3	-2.397E-01	-1.902E-01	-1.416E-01	-9.392E-02	-4.680E-02	2.168E-16	4.680E-02	9.392E-02	1.416E-01	1.902E-01	2.397E-01
	.4	-2.353E-01	-1.860E-01	-1.381E-01	-9.138E-02	-4.547E-02	1.098E-16	4.547E-02	9.138E-02	1.381E-01	1.860E-01	2.353E-01
r/R	.5	-2.283E-01	-1.794E-01	-1.325E-01	-8.726E-02	-4.331E-02	-1.786E-17	4.331E-02	8.726E-02	1.325E-01	1.794E-01	2.283E-01
	.6	-2.170E-01	-1.686E-01	-1.233E-01	-8.066E-02	-3.985E-02	-1.410E-16	3.985E-02	8.066E-02	1.233E-01	1.686E-01	2.170E-01
	.7	-1.987E-01	-1.513E-01	-1.088E-01	-7.020E-02	-3.441E-02	-2.242E-16	3.441E-02	7.020E-02	1.088E-01	1.513E-01	1.987E-01
	.8	-1.687E-01	-1.231E-01	-8.554E-02	-5.392E-02	-2.607E-02	-2.308E-16	2.607E-02	5.392E-02	8.554E-02	1.231E-01	1.687E-01
	.9	-1.173E-01	-7.643E-02	-4.943E-02	-2.997E-02	-1.421E-02	-1.457E-16	1.421E-02	2.997E-02	4.943E-02	7.643E-02	1.173E-01
	1.0	5.947E-06	-1.355E-06	-9.172E-07	-5.671E-07	-2.715E-07	-2.106E-21	2.715E-07	5.671E-07	9.172E-07	1.355E-06	-5.947E-06

$G_2(r, z, \lambda)$

L/R = .6	r/R	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	2.669E-01	2.692E-01	2.763E-01	2.882E-01	3.048E-01	3.264E-01	3.530E-01	3.846E-01	4.215E-01	4.635E-01	5.108E-01
	.1	2.636E-01	2.660E-01	2.730E-01	2.848E-01	3.014E-01	3.229E-01	3.494E-01	3.810E-01	4.178E-01	4.598E-01	5.072E-01
	.2	2.539E-01	2.562E-01	2.631E-01	2.748E-01	2.912E-01	3.125E-01	3.388E-01	3.702E-01	4.068E-01	4.488E-01	4.961E-01
	.3	2.378E-01	2.400E-01	2.468E-01	2.582E-01	2.743E-01	2.952E-01	3.211E-01	3.521E-01	3.884E-01	4.302E-01	4.774E-01
	.4	2.156E-01	2.178E-01	2.242E-01	2.352E-01	2.507E-01	2.709E-01	2.961E-01	3.265E-01	3.624E-01	4.038E-01	4.509E-01
r/R	.5	1.877E-01	1.897E-01	1.958E-01	2.060E-01	2.206E-01	2.398E-01	2.639E-01	2.933E-01	3.283E-01	3.691E-01	4.160E-01
	.6	1.549E-01	1.567E-01	1.621E-01	1.712E-01	1.844E-01	2.019E-01	2.242E-01	2.519E-01	2.854E-01	3.253E-01	3.719E-01
	.7	1.181E-01	1.195E-01	1.240E-01	1.316E-01	1.426E-01	1.576E-01	1.770E-01	2.018E-01	2.327E-01	2.708E-01	3.168E-01
	.8	7.870E-02	7.974E-02	8.291E-02	8.837E-02	9.643E-02	1.076E-01	1.225E-01	1.423E-01	1.684E-01	2.029E-01	2.474E-01
	.9	3.862E-02	3.915E-02	4.078E-02	4.361E-02	4.785E-02	5.381E-02	6.206E-02	7.358E-02	9.021E-02	1.156E-01	1.559E-01
	1.0	8.366E-07	8.472E-07	8.796E-07	9.355E-07	1.018E-06	1.133E-06	1.290E-06	1.503E-06	1.797E-06	2.202E-06	-5.110E-06

$G_3(r, \lambda)$

L/R = .6	r/R	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01	3.472E-01
	.1	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01	3.438E-01
	.2	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01
	.3	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01	3.160E-01
	.4	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01
r/R	.5	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01	2.604E-01
	.6	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01	2.222E-01
	.7	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01	1.771E-01
	.8	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.9	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02	6.597E-02
	1.0	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06	1.258E-06

$G_4(r, z, \lambda)$

L/R = .6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	6.590E-17	-5.027E-04	-9.574E-04	-1.318E-03	-1.550E-03	-1.630E-03	-1.550E-03	-1.318E-03	-9.574E-04	-5.027E-04	-8.725E-16
	.2	3.544E-16	-1.115E-03	-2.120E-03	-2.918E-03	-3.430E-03	-3.606E-03	-3.430E-03	-2.918E-03	-2.120E-03	-1.115E-03	-6.055E-16
	.3	6.107E-16	-1.960E-03	-3.729E-03	-5.133E-03	-6.034E-03	-6.344E-03	-6.034E-03	-5.133E-03	-3.729E-03	-1.960E-03	-5.977E-16
	.4	7.183E-16	-3.234E-03	-6.149E-03	-8.460E-03	-9.943E-03	-1.045E-02	-9.943E-03	-8.460E-03	-6.149E-03	-3.234E-03	-4.793E-16
	.5	5.920E-16	-5.220E-03	-9.923E-03	-1.365E-02	-1.603E-02	-1.685E-02	-1.603E-02	-1.365E-02	-9.923E-03	-5.220E-03	-1.209E-15
	.6	4.492E-16	-8.400E-03	-1.595E-02	-2.190E-02	-2.569E-02	-2.699E-02	-2.569E-02	-2.190E-02	-1.595E-02	-8.400E-03	-2.068E-15
	.7	5.682E-17	-1.360E-02	-2.572E-02	-3.517E-02	-4.113E-02	-4.316E-02	-4.113E-02	-3.517E-02	-2.572E-02	-1.360E-02	-2.495E-15
	.8	-2.267E-16	-2.246E-02	-4.200E-02	-5.672E-02	-6.574E-02	-6.877E-02	-6.574E-02	-5.672E-02	-4.200E-02	-2.246E-02	-3.617E-15
	.9	-5.093E-16	-3.933E-02	-7.056E-02	-9.195E-02	-1.043E-01	-1.083E-01	-1.043E-01	-9.195E-02	-7.056E-02	-3.933E-02	-4.675E-15
	1.0	-6.005E-16	-8.305E-02	-1.235E-01	-1.477E-01	-1.610E-01	-1.652E-01	-1.610E-01	-1.477E-01	-1.235E-01	-8.305E-02	-1.253E-14

$G_5(r, z, \lambda)$

L/R = .6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-2.499E-04	-4.758E-04	-6.561E-04	-7.730E-04	-8.148E-04	-7.768E-04	-6.621E-04	-4.815E-04	-2.528E-04	-1.016E-15
	.2	0.	-5.513E-04	-1.050E-03	-1.449E-03	-1.709E-03	-1.803E-03	-1.721E-03	-1.469E-03	-1.070E-03	-5.639E-04	-8.011E-16
	.3	0.	-9.654E-04	-1.840E-03	-2.542E-03	-3.002E-03	-3.172E-03	-3.032E-03	-2.591E-03	-1.889E-03	-9.951E-04	-8.364E-16
	.4	0.	-1.577E-03	-3.011E-03	-4.167E-03	-4.932E-03	-5.227E-03	-5.011E-03	-4.293E-03	-3.138E-03	-1.656E-03	-7.239E-16
	.5	0.	-2.508E-03	-4.796E-03	-6.658E-03	-7.914E-03	-8.426E-03	-8.117E-03	-6.988E-03	-5.127E-03	-2.712E-03	-1.483E-15
	.6	0.	-3.928E-03	-7.535E-03	-1.051E-02	-1.258E-02	-1.350E-02	-1.311E-02	-1.138E-02	-8.410E-03	-4.471E-03	-2.333E-15
	.7	0.	-6.067E-03	-1.169E-02	-1.643E-02	-1.986E-02	-2.158E-02	-2.127E-02	-1.874E-02	-1.403E-02	-7.530E-03	-2.649E-15
	.8	0.	-9.193E-03	-1.782E-02	-2.530E-02	-3.103E-02	-3.438E-02	-3.471E-02	-3.142E-02	-2.418E-02	-1.326E-02	-3.591E-15
	.9	0.	-1.356E-02	-2.647E-02	-3.806E-02	-4.758E-02	-5.415E-02	-5.670E-02	-5.389E-02	-4.409E-02	-2.577E-02	-4.398E-15
	1.0	0.	-1.924E-02	-3.785E-02	-5.515E-02	-7.038E-02	-8.260E-02	-9.058E-02	-9.255E-02	-8.562E-02	-6.381E-02	-1.193E-14

$G_6(r, \lambda)$

L/R = .6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02
	.2	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02
	.3	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.4	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01
	.5	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01	2.083E-01
	.6	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01
	.7	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01	2.917E-01
	.8	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01	3.333E-01
	.9	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01	3.750E-01
	1.0	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01	4.162E-01

$G_7(r, z, \lambda)$

L/R = .6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-2.031E-02	-2.034E-02	-2.041E-02	-2.053E-02	-2.067E-02	-2.083E-02	-2.099E-02	-2.114E-02	-2.125E-02	-2.133E-02	-2.135E-02
	.2	-4.052E-02	-4.058E-02	-4.074E-02	-4.099E-02	-4.131E-02	-4.167E-02	-4.202E-02	-4.234E-02	-4.260E-02	-4.276E-02	-4.282E-02
	.3	-6.046E-02	-6.058E-02	-6.087E-02	-6.131E-02	-6.188E-02	-6.250E-02	-6.312E-02	-6.369E-02	-6.413E-02	-6.442E-02	-6.452E-02
	.4	-8.000E-02	-8.017E-02	-8.064E-02	-8.138E-02	-8.231E-02	-8.333E-02	-8.436E-02	-8.529E-02	-8.603E-02	-8.650E-02	-8.666E-02
	.5	-9.880E-02	-9.906E-02	-9.982E-02	-1.010E-01	-1.025E-01	-1.042E-01	-1.058E-01	-1.073E-01	-1.095E-01	-1.093E-01	-1.095E-01
	.6	-1.164E-01	-1.168E-01	-1.180E-01	-1.199E-01	-1.223E-01	-1.250E-01	-1.277E-01	-1.301E-01	-1.320E-01	-1.332E-01	-1.336E-01
	.7	-1.320E-01	-1.327E-01	-1.347E-01	-1.377E-01	-1.416E-01	-1.458E-01	-1.501E-01	-1.539E-01	-1.570E-01	-1.590E-01	-1.597E-01
	.8	-1.443E-01	-1.455E-01	-1.487E-01	-1.537E-01	-1.599E-01	-1.667E-01	-1.734E-01	-1.796E-01	-1.846E-01	-1.879E-01	-1.890E-01
	.9	-1.511E-01	-1.531E-01	-1.587E-01	-1.669E-01	-1.768E-01	-1.875E-01	-1.982E-01	-2.081E-01	-2.163E-01	-2.219E-01	-2.239E-01
	1.0	-1.471E-01	-1.520E-01	-1.625E-01	-1.762E-01	-1.917E-01	-2.081E-01	-2.245E-01	-2.400E-01	-2.536E-01	-2.641E-01	-2.691E-01

$G_1(r, z, \lambda)$

L/R = .8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	-2.309E-01	-1.818E-01	-1.346E-01	-8.878E-02	-4.410E-02	3.121E-16	4.410E-02	8.879E-02	1.346E-01	1.818E-01	2.309E-01
.1	-2.302E-01	-1.811E-01	-1.340E-01	-8.834E-02	-4.387E-02	2.898E-16	4.387E-02	8.834E-02	1.340E-01	1.811E-01	2.302E-01
.2	-2.278E-01	-1.789E-01	-1.321E-01	-8.698E-02	-4.316E-02	2.278E-16	4.316E-02	8.698E-02	1.321E-01	1.789E-01	2.278E-01
.3	-2.237E-01	-1.750E-01	-1.287E-01	-8.454E-02	-4.188E-02	1.396E-16	4.188E-02	8.454E-02	1.287E-01	1.750E-01	2.237E-01
.4	-2.171E-01	-1.688E-01	-1.235E-01	-8.074E-02	-3.986E-02	4.274E-17	3.968E-02	8.074E-02	1.235E-01	1.688E-01	2.171E-01
.5	-2.075E-01	-1.596E-01	-1.157E-01	-7.514E-02	-3.696E-02	-4.530E-17	3.696E-02	7.514E-02	1.157E-01	1.596E-01	2.075E-01
.6	-1.934E-01	-1.463E-01	-1.045E-01	-6.713E-02	-3.280E-02	-1.089E-16	3.280E-02	6.713E-02	1.045E-01	1.463E-01	1.934E-01
.7	-1.730E-01	-1.270E-01	-8.860E-02	-5.594E-02	-2.706E-02	-1.363E-16	2.706E-02	5.594E-02	8.860E-02	1.270E-01	1.730E-01
.8	-1.428E-01	-9.913E-02	-6.630E-02	-4.078E-02	-1.945E-02	-1.222E-16	1.945E-02	4.078E-02	6.630E-02	9.913E-02	1.428E-01
.9	-9.609E-02	-5.805E-02	-3.615E-02	-2.151E-02	-1.011E-02	-7.115E-17	1.011E-02	2.151E-02	3.615E-02	5.805E-02	9.609E-02
1.0	4.290E-06	-1.075E-06	-6.975E-07	-4.231E-07	-2.007E-07	-1.056E-21	2.007E-07	4.231E-07	6.975E-07	1.075E-06	-4.290E-06

$G_2(r, z, \lambda)$

L/R = .8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	1.215E-01	1.235E-01	1.297E-01	1.401E-01	1.550E-01	1.745E-01	1.991E-01	2.289E-01	2.642E-01	3.053E-01	3.523E-01
.1	1.199E-01	1.219E-01	1.280E-01	1.384E-01	1.532E-01	1.726E-01	1.970E-01	2.267E-01	2.620E-01	3.039E-01	3.500E-01
.2	1.151E-01	1.171E-01	1.231E-01	1.332E-01	1.477E-01	1.668E-01	1.908E-01	2.202E-01	2.552E-01	2.960E-01	3.430E-01
.3	1.074E-01	1.093E-01	1.150E-01	1.247E-01	1.386E-01	1.571E-01	1.805E-01	2.092E-01	2.437E-01	2.842E-01	3.310E-01
.4	9.678E-02	9.854E-02	1.039E-01	1.130E-01	1.261E-01	1.436E-01	1.660E-01	1.937E-01	2.273E-01	2.673E-01	3.139E-01
.5	8.369E-02	8.527E-02	9.008E-02	9.831E-02	1.103E-01	1.264E-01	1.472E-01	1.734E-01	2.058E-01	2.449E-01	2.912E-01
.6	6.852E-02	6.987E-02	7.398E-02	8.105E-02	9.142E-02	1.056E-01	1.242E-01	1.482E-01	1.785E-01	2.161E-01	2.619E-01
.7	5.184E-02	5.290E-02	5.614E-02	6.175E-02	7.007E-02	8.160E-02	9.712E-02	1.177E-01	1.447E-01	1.799E-01	[illegible]
.8	3.432E-02	3.505E-02	3.727E-02	4.114E-02	4.694E-02	5.511E-02	6.639E-02	8.192E-02	1.036E-01	1.342E-01	1.771E-01
.9	1.676E-02	1.713E-02	1.824E-02	2.018E-02	2.312E-02	2.731E-02	3.323E-02	4.169E-02	5.439E-02	7.519E-02	1.128E-01
1.0	3.669E-07	3.744E-07	3.975E-07	4.376E-07	4.974E-07	5.817E-07	6.982E-07	8.607E-07	1.095E-06	1.449E-06	-3.923E-06

$G_3(r, \lambda)$

L/R = .8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01	1.953E-01
.1	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01	1.934E-01
.2	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01
.3	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01	1.777E-01
.4	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01	1.641E-01
.5	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01	1.465E-01
.6	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
.7	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02	9.961E-02
.8	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02	7.031E-02
.9	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02	3.711E-02
1.0	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07	7.078E-07

$G_4(r, z, \lambda)$

L/R = .8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	2.072E-17	-1.181E-03	-2.246E-03	-3.091E-03	-3.633E-03	-3.820E-03	-3.633E-03	-3.091E-03	-2.246E-03	-1.181E-03	6.033E-17
	.2	-6.504E-17	-2.504E-03	-4.760E-03	-6.548E-03	-7.694E-03	-8.089E-03	-7.694E-03	-6.548E-03	-4.760E-03	-2.504E-03	3.776E-16
	.3	-3.961E-16	-4.121E-03	-7.835E-03	-1.077E-02	-1.266E-02	-1.330E-02	-1.266E-02	-1.077E-02	-7.835E-03	-4.121E-03	6.031E-17
	.4	-5.780E-16	-6.241E-03	-1.185E-02	-1.629E-02	-1.912E-02	-2.010E-02	-1.912E-02	-1.629E-02	-1.185E-02	-6.241E-03	-9.531E-16
	.5	-6.174E-16	-9.137E-03	-1.733E-02	-2.377E-02	-2.787E-02	-2.927E-02	-2.787E-02	-2.377E-02	-1.733E-02	-9.137E-03	-1.284E-15
	.6	-7.476E-16	-1.323E-02	-2.502E-02	-3.418E-02	-3.996E-02	-4.193E-02	-3.996E-02	-3.418E-02	-2.502E-02	-1.323E-02	-1.455E-15
	.7	-8.089E-16	-1.923E-02	-3.608E-02	-4.890E-02	-5.681E-02	-5.948E-02	-5.681E-02	-4.890E-02	-3.608E-02	-1.923E-02	-2.369E-15
	.8	-9.440E-16	-2.852E-02	-5.254E-02	-6.992E-02	-8.024E-02	-8.366E-02	-8.024E-02	-6.992E-02	-5.254E-02	-2.852E-02	-2.659E-15
	.9	-1.372E-15	-4.480E-02	-7.818E-02	-1.000E-01	-1.123E-01	-1.162E-01	-1.123E-01	-1.000E-01	-7.818E-02	-4.480E-02	-4.093E-15
	1.0	-1.439E-15	-8.053E-02	-1.189E-01	-1.416E-01	-1.539E-01	-1.578E-01	-1.539E-01	-1.416E-01	-1.189E-01	-8.053E-02	-1.190E-14

$G_5(r, z, \lambda)$

L/R = .8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-5.739E-04	-1.096E-03	-1.519E-03	-1.800E-03	-1.910E-03	-1.833E-03	-1.573E-03	-1.150E-03	-6.069E-04	1.486E-16
	.2	0.	-1.210E-03	-2.312E-03	-3.206E-03	-3.805E-03	-4.045E-03	-3.889E-03	-3.342E-03	-2.448E-03	-1.294E-03	5.709E-16
	.3	0.	-1.973E-03	-3.775E-03	-5.245E-03	-6.241E-03	-6.652E-03	-6.416E-03	-5.529E-03	-4.060E-03	-2.149E-03	3.279E-16
	.4	0.	-2.940E-03	-5.637E-03	-7.855E-03	-9.383E-03	-1.005E-02	-9.740E-03	-8.434E-03	-6.218E-03	-3.301E-03	-5.201E-16
	.5	0.	-4.201E-03	-8.074E-03	-1.130E-02	-1.357E-02	-1.464E-02	-1.430E-02	-1.247E-02	-9.257E-03	-4.936E-03	-6.582E-16
	.6	0.	-5.855E-03	-1.129E-02	-1.589E-02	-1.925E-02	-2.096E-02	-2.071E-02	-1.829E-02	-1.372E-02	-7.376E-03	-6.740E-16
	.7	0.	-8.011E-03	-1.552E-02	-2.200E-02	-2.693E-02	-2.974E-02	-2.968E-02	-2.690E-02	-2.056E-02	-1.121E-02	-1.432E-15
	.8	0.	-1.077E-02	-2.096E-02	-2.999E-02	-3.719E-02	-4.183E-02	-4.305E-02	-3.993E-02	-3.158E-02	-1.776E-02	-1.580E-15
	.9	0.	-1.419E-02	-2.778E-02	-4.014E-02	-5.054E-02	-5.811E-02	-6.172E-02	-5.986E-02	-5.040E-02	-3.061E-02	-2.863E-15
	1.0	0.	-1.825E-02	-3.593E-02	-5.243E-02	-6.705E-02	-7.892E-02	-8.685E-02	-8.914E-02	-8.292E-02	-6.228E-02	-1.051E-14

$G_6(r, \lambda)$

L/R = .8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02
.2	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02
.3	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02
.4	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
.5	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01	1.562E-01
.6	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01
.7	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01	2.187E-01
.8	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01	2.500E-01
.9	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01	2.813E-01
1.0	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01	3.121E-01

$G_7(r, z, \lambda)$

L/R = .8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	-1.441E-02	-1.447E-02	-1.464E-02	-1.491E-02	-1.525E-02	-1.562E-02	-1.600E-02	-1.634E-02	-1.661E-02	-1.678E-02	-1.684E-02
.2	-2.867E-02	-2.880E-02	-2.917E-02	-2.974E-02	-3.045E-02	-3.125E-02	-3.205E-02	-3.276E-02	-3.333E-02	-3.370E-02	-3.383E-02
.3	-4.264E-02	-4.284E-02	-4.345E-02	-4.438E-02	-4.557E-02	-4.687E-02	-4.818E-02	-4.936E-02	-5.030E-02	-5.091E-02	-5.111E-02
.4	-5.609E-02	-5.641E-02	-5.732E-02	-5.874E-02	-6.052E-02	-6.250E-02	-6.448E-02	-6.626E-02	-6.768E-02	-6.859E-02	-6.891E-02
.5	-6.877E-02	-6.923E-02	-7.057E-02	-7.264E-02	-7.524E-02	-7.812E-02	-8.101E-02	-8.361E-02	-8.568E-02	-8.702E-02	-8.748E-02
.6	-8.030E-02	-8.097E-02	-8.290E-02	-8.589E-02	-8.962E-02	-9.375E-02	-9.788E-02	-1.016E-01	-1.046E-01	-1.065E-01	-1.072E-01
.7	-9.014E-02	-9.111E-02	-9.390E-02	-9.819E-02	-1.035E-01	-1.094E-01	-1.152E-01	-1.206E-01	-1.248E-01	-1.276E-01	-1.286E-01
.8	-9.745E-02	-9.890E-02	-1.030E-01	-1.092E-01	-1.167E-01	-1.250E-01	-1.333E-01	-1.408E-01	-1.470E-01	-1.511E-01	-1.526E-01
.9	-1.009E-01	-1.032E-01	-1.095E-01	-1.184E-01	-1.291E-01	-1.406E-01	-1.521E-01	-1.628E-01	-1.718E-01	-1.781E-01	-1.804E-01
1.0	-9.752E-02	-1.023E-01	-1.124E-01	-1.256E-01	-1.404E-01	-1.561E-01	-1.717E-01	-1.866E-01	-1.997E-01	-2.098E-01	-2.146E-01

$G_1(r, z, \lambda)$

L/R = 1.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-2.130E-01	-1.648E-01	-1.201E-01	-7.827E-02	-3.856E-02	-6.974E-16	3.856E-02	7.827E-02	1.201E-01	1.648E-01	2.130E-01
	.1	-2.121E-01	-1.639E-01	-1.193E-01	-7.773E-02	-3.830E-02	-6.966E-16	3.830E-02	7.773E-02	1.193E-01	1.639E-01	2.121E-01
	.2	-2.092E-01	-1.612E-01	-1.171E-01	-7.608E-02	-3.744E-02	-6.922E-16	3.744E-02	7.608E-02	1.171E-01	1.612E-01	2.092E-01
	.3	-2.043E-01	-1.565E-01	-1.131E-01	-7.321E-02	-3.593E-02	-6.789E-16	3.593E-02	7.321E-02	1.131E-01	1.565E-01	2.043E-01
	.4	-1.968E-01	-1.494E-01	-1.071E-01	-6.891E-02	-3.369E-02	-6.504E-16	3.369E-02	6.891E-02	1.071E-01	1.494E-01	1.968E-01
	.5	-1.861E-01	-1.394E-01	-9.866E-02	-6.290E-02	-3.058E-02	-6.009E-16	3.058E-02	6.290E-02	9.866E-02	1.394E-01	1.861E-01
	.6	-1.714E-01	-1.255E-01	-8.720E-02	-5.485E-02	-2.645E-02	-5.261E-16	2.645E-02	5.485E-02	8.720E-02	1.255E-01	1.714E-01
	.7	-1.511E-01	-1.066E-01	-7.195E-02	-4.439E-02	-2.118E-02	-4.238E-16	2.118E-02	4.439E-02	7.195E-02	1.066E-01	1.511E-01
	.8	-1.228E-01	-8.086E-02	-5.212E-02	-3.134E-02	-1.476E-02	-2.960E-16	1.476E-02	3.134E-02	5.212E-02	8.086E-02	1.228E-01
	.9	-8.105E-02	-4.556E-02	-2.747E-02	-1.607E-02	-7.481E-03	-1.499E-16	7.481E-03	1.607E-02	2.747E-02	4.556E-02	8.105E-02
	1.0	3.342E-06	-8.674E-07	-5.446E-07	-3.250E-07	-1.530E-07	-3.043E-21	1.530E-07	3.250E-07	5.446E-07	8.674E-07	-3.342E-06

$G_2(r, z, \lambda)$

L/R = 1.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	5.988E-02	6.153E-02	6.654E-02	7.512E-02	8.761E-02	1.045E-01	1.262E-01	1.534E-01	1.866E-01	2.263E-01	2.729E-01
	.1	5.906E-02	6.069E-02	6.565E-02	7.415E-02	8.653E-02	1.032E-01	1.248E-01	1.519E-01	1.850E-01	2.246E-01	2.711E-01
	.2	5.663E-02	5.821E-02	6.301E-02	7.125E-02	8.329E-02	9.958E-02	1.207E-01	1.473E-01	1.801E-01	2.195E-01	2.659E-01
	.3	5.267E-02	5.416E-02	5.870E-02	6.650E-02	7.795E-02	9.353E-02	1.139E-01	1.397E-01	1.718E-01	2.107E-01	2.569E-01
	.4	4.731E-02	4.867E-02	5.283E-02	6.002E-02	7.060E-02	8.513E-02	1.043E-01	1.289E-01	1.599E-01	1.981E-01	2.441E-01
	.5	4.075E-02	4.194E-02	4.561E-02	5.197E-02	6.141E-02	7.449E-02	9.199E-02	1.149E-01	1.443E-01	1.813E-01	2.269E-01
	.6	3.322E-02	3.422E-02	3.728E-02	4.262E-02	5.061E-02	6.181E-02	7.706E-02	9.747E-02	1.245E-01	1.597E-01	2.046E-01
	.7	2.503E-02	2.580E-02	2.816E-02	3.229E-02	3.853E-02	4.740E-02	5.971E-02	7.668E-02	1.001E-01	1.324E-01	1.761E-01
	.8	1.652E-02	1.703E-02	1.862E-02	2.141E-02	2.566E-02	3.177E-02	4.042E-02	5.275E-02	7.074E-02	9.799E-02	1.393E-01
	.9	8.049E-03	8.302E-03	9.085E-03	1.047E-02	1.258E-02	1.565E-02	2.006E-02	2.653E-02	3.656E-02	5.386E-02	8.910E-02
	1.0	1.771E-07	1.826E-07	1.993E-07	2.286E-07	2.730E-07	3.364E-07	4.259E-07	5.536E-07	7.439E-07	1.050E-06	-3.165E-06

$G_3(r, \lambda)$

L/R = 1.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.1	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01	1.238E-01
	.2	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01	1.200E-01
	.3	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01	1.138E-01
	.4	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01	1.050E-01
	.5	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02
	.6	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02	8.000E-02
	.7	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02	6.375E-02
	.8	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02	4.500E-02
	.9	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02	2.375E-02
	1.0	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07	4.530E-07

$G_4(r, z, \lambda)$

L/R = 1.0		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-5.586E-16	-1.823E-03	-3.464E-03	-4.761E-03	-5.590E-03	-5.875E-03	-5.590E-03	-4.761E-03	-3.464E-03	-1.823E-03	-5.554E-16
	.2	-8.784E-16	-3.788E-03	-7.193E-03	-9.880E-03	-1.160E-02	-1.219E-02	-1.160E-02	-9.880E-03	-7.193E-03	-3.788E-03	-1.283E-15
	.3	-1.230E-15	-6.045E-03	-1.147E-02	-1.574E-02	-1.846E-02	-1.939E-02	-1.846E-02	-1.574E-02	-1.147E-02	-6.045E-03	-2.188E-15
	.4	-1.731E-15	-8.786E-03	-1.665E-02	-2.280E-02	-2.670E-02	-2.804E-02	-2.670E-02	-2.280E-02	-1.665E-02	-8.785E-03	-2.453E-15
	.5	-2.237E-15	-1.226E-02	-2.316E-02	-3.162E-02	-3.693E-02	-3.873E-02	-3.693E-02	-3.162E-02	-2.316E-02	-1.226E-02	[illegible]
	.6	-2.510E-15	-1.684E-02	-3.163E-02	-4.290E-02	-4.987E-02	-5.222E-02	-4.987E-02	-4.290E-02	-3.163E-02	-1.684E-02	[illegible]
	.7	-2.702E-15	-2.315E-02	-4.298E-02	-5.761E-02	-6.642E-02	-6.935E-02	-6.642E-02	-5.761E-02	-4.298E-02	-2.315E-02	[illegible]
	.8	-3.070E-15	-3.243E-02	-5.873E-02	-7.698E-02	-8.754E-02	-9.099E-02	-8.754E-02	-7.698E-02	-5.873E-02	-3.243E-02	[illegible]
	.9	-3.425E-15	-4.782E-02	-8.136E-02	-1.025E-01	-1.141E-01	-1.178E-01	-1.141E-01	-1.025E-01	-8.136E-02	-4.782E-02	-6.088E-15
	1.0	-3.291E-15	-7.778E-02	-1.139E-01	-1.349E-01	-1.463E-01	-1.499E-01	-1.463E-01	-1.349E-01	-1.139E-01	-7.778E-02	-1.316E-14

$G_5(r, z, \lambda)$

L/R = 1.0		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
	.1	0.	-8.553E-04	-1.641E-03	-2.289E-03	-2.739E-03	-2.937E-03	-2.851E-03	-2.471E-03	-1.823E-03	[illegible]	[illegible]
	.2	0.	-1.763E-03	-3.386E-03	-4.730E-03	-5.669E-03	-6.093E-03	-5.928E-03	-5.150E-03	-3.807E-03	[illegible]	[illegible]
	.3	0.	-2.777E-03	-5.340E-03	-7.477E-03	-8.988E-03	-9.697E-03	-9.473E-03	[illegible]	-6.131E-03	[illegible]	[illegible]
	.4	0.	-3.953E-03	-7.616E-03	-1.070E-02	-1.292E-02	-1.402E-02	-1.378E-02	-1.210E-02	-9.030E-03	[illegible]	[illegible]
	.5	0.	-5.347E-03	-1.033E-02	-1.457E-02	-1.771E-02	-1.937E-02	-1.922E-02	-1.704E-02	-1.283E-02	-5.912E-03	-1.948E-15
	.6	0.	-7.015E-03	-1.360E-02	-1.929E-02	-2.363E-02	-2.611E-02	-2.624E-02	-2.361E-02	-1.803E-02	-9.823E-03	-2.311E-15
	.7	0.	-9.008E-03	-1.752E-02	-2.503E-02	-3.096E-02	-3.468E-02	-3.546E-02	-3.258E-02	-2.546E-02	[illegible]	-3.019E-15
	.8	0.	-1.136E-02	-2.220E-02	-3.195E-02	-3.997E-02	-4.549E-02	-4.757E-02	-4.504E-02	-3.653E-02	-2.107E-02	-3.765E-15
	.9	0.	-1.409E-02	-2.766E-02	-4.013E-02	-5.083E-02	-5.892E-02	-6.328E-02	-6.234E-02	-5.370E-02	-3.372E-02	-4.968E-15
	1.0	0.	-1.717E-02	-3.385E-02	-4.948E-02	-6.345E-02	-7.493E-02	-8.282E-02	-8.545E-02	-8.091E-02	-6.061E-02	-1.191E-14

$G_6(r, \lambda)$

L/R = 1.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02
	.2	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02
	.3	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02
	.4	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01
r/R	.5	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.6	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01	1.500E-01
	.7	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01	1.750E-01
	.8	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01
	.9	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01	2.250E-01
	1.0	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01	2.497E-01

$G_7(r, z, \lambda)$

L/R = 1.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-1.063E-02	-1.072E-02	-1.099E-02	-1.140E-02	-1.192E-02	-1.250E-02	-1.308E-02	-1.360E-02	-1.401E-02	-1.428E-02	[illegible]
	.2	-2.111E-02	-2.130E-02	-2.186E-02	-2.272E-02	-2.380E-02	-2.500E-02	-2.620E-02	-2.728E-02	-2.814E-02	-2.870E-02	[illegible]
	.3	-3.131E-02	-3.161E-02	-3.250E-02	-3.387E-02	-3.559E-02	-3.750E-02	-3.941E-02	-4.113E-02	-4.250E-02	-4.339E-02	[illegible]
	.4	-4.103E-02	-4.147E-02	-4.276E-02	-4.475E-02	-4.724E-02	-5.000E-02	-5.276E-02	-5.525E-02	-5.724E-02	-5.853E-02	[illegible]
r/R	.5	-5.006E-02	-5.068E-02	-5.247E-02	-5.523E-02	-5.869E-02	-6.250E-02	-6.631E-02	-6.977E-02	-7.253E-02	-7.432E-02	[illegible]
	.6	-5.812E-02	-5.897E-02	-6.142E-02	-6.518E-02	-6.986E-02	-7.500E-02	-8.014E-02	-8.482E-02	-8.850E-02	-9.103E-02	[illegible]
	.7	-6.482E-02	-6.599E-02	-6.933E-02	-7.441E-02	-8.066E-02	-8.750E-02	-9.434E-02	-1.006E-01	-1.057E-01	-1.090E-01	-1.102E-01
	.8	-6.960E-02	-7.125E-02	-7.568E-02	-8.273E-02	-9.102E-02	-1.000E-01	-1.090E-01	-1.173E-01	-1.241E-01	-1.287E-01	-1.304E-01
	.9	-7.159E-02	-7.408E-02	-8.066E-02	-8.994E-02	-1.008E-01	-1.125E-01	-1.242E-01	-1.351E-01	-1.443E-01	-1.509E-01	-1.534E-01
	1.0	-6.893E-02	-7.358E-02	-8.332E-02	-9.586E-02	-1.100E-01	-1.249E-01	-1.397E-01	-1.539E-01	-1.664E-01	-1.761E-01	[illegible]

$G_1(r, z, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	-1.937E-01	-1.465E-01	-1.045E-01	-6.700E-02	-3.267E-02	-3.683E-16	3.267E-02	6.700E-02	1.045E-01	1.465E-01	1.937E-01
	.1	-1.927E-01	-1.456E-01	-1.037E-01	-6.644E-02	-3.238E-02	-3.664E-16	3.238E-02	6.644E-02	1.037E-01	1.456E-01	1.927E-01
	.2	-1.897E-01	-1.427E-01	-1.014E-01	-6.474E-02	-3.149E-02	-3.603E-16	3.149E-02	6.474E-02	1.014E-01	1.427E-01	1.897E-01
	.3	-1.846E-01	-1.378E-01	-9.727E-02	-6.182E-02	-2.998E-02	-3.493E-16	2.998E-02	6.182E-02	9.727E-02	1.378E-01	1.846E-01
	.4	-1.769E-01	-1.306E-01	-9.125E-02	-5.756E-02	-2.778E-02	-3.318E-16	2.778E-02	5.756E-02	9.125E-02	1.306E-01	1.769E-01
r/R	.5	-1.663E-01	-1.207E-01	-8.304E-02	-5.180E-02	-2.484E-02	-3.056E-16	2.484E-02	5.180E-02	8.304E-02	1.207E-01	1.663E-01
	.6	-1.520E-01	-1.073E-01	-7.225E-02	-4.439E-02	-2.111E-02	-2.677E-16	2.111E-02	4.439E-02	7.225E-02	1.073E-01	1.520E-01
	.7	-1.329E-01	-8.976E-02	-5.849E-02	-3.522E-02	-1.657E-02	-2.161E-16	1.657E-02	3.522E-02	5.849E-02	8.976E-02	1.329E-01
	.8	-1.069E-01	-6.669E-02	-4.144E-02	-2.436E-02	-1.133E-02	-1.512E-16	1.133E-02	2.436E-02	4.144E-02	6.669E-02	1.069E-01
	.9	-6.979E-02	-3.657E-02	-2.138E-02	-1.229E-02	-5.663E-03	-7.657E-17	5.663E-03	1.229E-02	2.138E-02	3.657E-02	6.979E-02
	1.0	2.736E-06	-7.100E-07	-4.324E-07	-2.537E-07	-1.183E-07	-1.546E-21	1.183E-07	2.537E-07	4.324E-07	7.100E-07	-2.736E-06

$G_2(r, z, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	3.087E-02	3.212E-02	3.598E-02	4.271E-02	5.275E-02	6.672E-02	8.542E-02	1.097E-01	1.405E-01	1.786E-01	2.246E-01
	.1	3.044E-02	3.168E-02	3.549E-02	4.213E-02	5.207E-02	6.591E-02	8.444E-02	1.086E-01	1.392E-01	1.772E-01	2.232E-01
	.2	2.916E-02	3.035E-02	3.402E-02	4.044E-02	5.004E-02	6.347E-02	8.153E-02	1.052E-01	1.354E-01	1.731E-01	2.189E-01
	.3	2.707E-02	2.819E-02	3.163E-02	3.766E-02	4.671E-02	5.945E-02	7.669E-02	9.947E-02	1.289E-01	1.660E-01	2.116E-01
	.4	2.427E-02	2.528E-02	2.841E-02	3.389E-02	4.217E-02	5.390E-02	6.995E-02	9.144E-02	1.197E-01	1.559E-01	2.012E-01
r/R	.5	2.086E-02	2.174E-02	2.445E-02	2.925E-02	3.653E-02	4.694E-02	6.137E-02	8.105E-02	1.075E-01	1.424E-01	1.872E-01
	.6	1.696E-02	1.769E-02	1.993E-02	2.390E-02	2.996E-02	3.873E-02	5.107E-02	6.829E-02	9.218E-02	1.250E-01	1.690E-01
	.7	1.275E-02	1.330E-02	1.501E-02	1.804E-02	2.271E-02	2.952E-02	3.928E-02	5.326E-02	7.350E-02	1.031E-01	1.456E-01
	.8	8.401E-03	8.767E-03	9.903E-03	1.193E-02	1.506E-02	1.968E-02	2.639E-02	3.629E-02	5.135E-02	7.546E-02	1.153E-01
	.9	4.090E-03	4.269E-03	4.825E-03	5.819E-03	7.364E-03	9.654E-03	1.303E-02	1.810E-02	2.621E-02	4.084E-02	7.388E-02
	1.0	9.027E-08	9.416E-08	1.062E-07	1.277E-07	1.608E-07	2.091E-07	2.790E-07	3.814E-07	5.386E-07	8.042E-07	-2.645E-06

$G_3(r, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02	8.681E-02
	.1	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02	8.594E-02
	.2	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02
	.3	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02	7.899E-02
	.4	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02	7.292E-02
r/R	.5	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02	6.510E-02
	.6	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02
	.7	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02	4.427E-02
	.8	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02
	.9	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02	1.649E-02
	1.0	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07	3.146E-07

$G_4(r, z, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-5.139E-16	-2.315E-03	-4.388E-03	-6.014E-03	-7.046E-03	-7.399E-03	-7.046E-03	-6.014E-03	-4.388E-03	-2.315E-03	-1.621E-15
	.2	-1.051E-15	-4.760E-03	-9.015E-03	-1.234E-02	-1.445E-02	-1.517E-02	-1.445E-02	-1.234E-02	-9.015E-03	-4.760E-03	-2.182E-15
	.3	-1.613E-15	-7.473E-03	-1.413E-02	-1.932E-02	-2.259E-02	-2.370E-02	-2.259E-02	-1.932E-02	-1.413E-02	-7.473E-03	-2.998E-15
	.4	-2.136E-15	-1.063E-02	-2.005E-02	-2.732E-02	-3.186E-02	-3.341E-02	-3.186E-02	-2.732E-02	-2.005E-02	-1.063E-02	-3.261E-15
	.5	-2.494E-15	-1.445E-02	-2.714E-02	-3.678E-02	-4.274E-02	-4.474E-02	-4.274E-02	-3.678E-02	-2.714E-02	-1.445E-02	-4.032E-15
	.6	-2.762E-15	-1.928E-02	-3.591E-02	-4.825E-02	-5.571E-02	-5.819E-02	-5.571E-02	-4.825E-02	-3.591E-02	-1.928E-02	-4.946E-15
	.7	-2.967E-15	-2.569E-02	-4.710E-02	-6.236E-02	-7.132E-02	-7.425E-02	-7.132E-02	-6.236E-02	-4.710E-02	-2.569E-02	-5.102E-15
	.8	-3.159E-15	-3.480E-02	-6.187E-02	-7.992E-02	-9.009E-02	-9.337E-02	-9.009E-02	-7.992E-02	-6.187E-02	-3.480E-02	-6.115E-15
	.9	-3.159E-15	-4.925E-02	-8.185E-02	-1.017E-01	-1.124E-01	-1.159E-01	-1.124E-01	-1.017E-01	-8.185E-02	-4.925E-02	-6.872E-15
	1.0	-2.904E-15	-7.488E-02	-1.086E-01	-1.279E-01	-1.382E-01	-1.415E-01	-1.382E-01	-1.279E-01	-1.086E-01	-7.488E-02	-1.332E-14

$G_5(r, z, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-1.037E-03	-2.000E-03	-2.814E-03	-3.404E-03	-3.699E-03	-3.642E-03	-3.200E-03	-2.388E-03	-1.278E-03	-1.528E-15
	.2	0.	-2.112E-03	-4.077E-03	-5.745E-03	-6.963E-03	-7.585E-03	-7.488E-03	-6.599E-03	-4.938E-03	-2.647E-03	-1.913E-15
	.3	0.	-3.264E-03	-6.309E-03	-8.909E-03	-1.083E-02	-1.185E-02	-1.175E-02	-1.041E-02	-7.825E-03	-4.209E-03	-2.572E-15
	.4	0.	-4.530E-03	-8.772E-03	-1.243E-02	-1.518E-02	-1.670E-02	-1.668E-02	-1.489E-02	-1.128E-02	-6.099E-03	-2.676E-15
	.5	0.	-5.945E-03	-1.154E-02	-1.641E-02	-2.017E-02	-2.237E-02	-2.257E-02	-2.037E-02	-1.560E-02	-8.508E-03	-3.309E-15
	.6	0.	-7.539E-03	-1.467E-02	-2.098E-02	-2.597E-02	-2.909E-02	-2.974E-02	-2.727E-02	-2.123E-02	-1.174E-02	-4.092E-15
	.7	0.	-9.337E-03	-1.824E-02	-2.622E-02	-3.274E-02	-3.713E-02	-3.858E-02	-3.615E-02	-2.887E-02	-1.635E-02	-4.141E-15
	.8	0.	-1.136E-02	-2.226E-02	-3.220E-02	-4.059E-02	-4.669E-02	-4.950E-02	-4.772E-02	-3.961E-02	-2.345E-02	-5.061E-15
	.9	0.	-1.360E-02	-2.675E-02	-3.895E-02	-4.960E-02	-5.793E-02	-6.284E-02	-6.274E-02	-5.510E-02	-3.565E-02	-5.740E-15
	1.0	0.	-1.604E-02	-3.165E-02	-4.638E-02	-5.966E-02	-7.074E-02	-7.858E-02	-8.157E-02	-7.694E-02	-5.885E-02	-1.210E-14

$G_6(r, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02	2.083E-02
	.2	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02
	.3	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02
	.4	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02
r/R	.5	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01	1.042E-01
	.6	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.7	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01	1.458E-01
	.8	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01	1.667E-01
	.9	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01	1.875E-01
	1.0	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01	2.081E-01

$G_7(r, z, \lambda)$

L/R = 1.2		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-8.051E-03	-8.167E-03	-8.505E-03	-9.030E-03	-9.688E-03	-1.042E-02	-1.114E-02	-1.180E-02	-1.233E-02	-1.267E-02	-1.278E-02
	.2	-1.598E-02	-1.622E-02	-1.691E-02	-1.799E-02	-1.934E-02	-2.083E-02	-2.233E-02	-2.368E-02	-2.475E-02	-2.545E-02	-2.569E-02
	.3	-2.365E-02	-2.403E-02	-2.512E-02	-2.680E-02	-2.892E-02	-3.125E-02	-3.358E-02	-3.570E-02	-3.738E-02	-3.847E-02	-3.885E-02
	.4	-3.092E-02	-3.146E-02	-3.300E-02	-3.539E-02	-3.838E-02	-4.167E-02	-4.496E-02	-4.794E-02	-5.033E-02	-5.188E-02	-5.241E-02
r/R	.5	-3.761E-02	-3.834E-02	-4.044E-02	-4.367E-02	-4.768E-02	-5.208E-02	-5.649E-02	-6.050E-02	-6.372E-02	-6.582E-02	-6.655E-02
	.6	-4.351E-02	-4.449E-02	-4.728E-02	-5.153E-02	-5.676E-02	-6.250E-02	-6.824E-02	-7.348E-02	-7.772E-02	-8.051E-02	-8.149E-02
	.7	-4.833E-02	-4.964E-02	-5.333E-02	-5.885E-02	-6.559E-02	-7.292E-02	-8.024E-02	-8.698E-02	-9.251E-02	-9.619E-02	-9.750E-02
	.8	-5.169E-02	-5.347E-02	-5.838E-02	-6.554E-02	-7.411E-02	-8.333E-02	-9.256E-02	-1.011E-01	-1.083E-01	-1.132E-01	-1.150E-01
	.9	-5.297E-02	-5.556E-02	-6.224E-02	-7.151E-02	-8.228E-02	-9.375E-02	-1.052E-01	-1.160E-01	-1.253E-01	-1.319E-01	-1.345E-01
	1.0	-5.088E-02	-5.538E-02	-6.472E-02	-7.663E-02	-9.001E-02	-1.040E-01	-1.181E-01	-1.315E-01	-1.434E-01	-1.527E-01	-1.572E-01

$G_1(r, z, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-1.752E-01	-1.289E-01	-8.967E-02	-5.629E-02	-2.707E-02	-4.504E-16	2.707E-02	5.629E-02	8.967E-02	1.289E-01	1.752E-01
	.1	-1.742E-01	-1.280E-01	-8.892E-02	-5.576E-02	-2.680E-02	-4.446E-16	2.680E-02	5.576E-02	8.892E-02	1.280E-01	1.742E-01
	.2	-1.713E-01	-1.252E-01	-8.662E-02	-5.414E-02	-2.597E-02	-4.274E-16	2.597E-02	5.414E-02	8.662E-02	1.252E-01	1.713E-01
	.3	-1.663E-01	-1.205E-01	-8.271E-02	-5.139E-02	-2.456E-02	-3.994E-16	2.456E-02	5.139E-02	8.271E-02	1.205E-01	1.663E-01
	.4	-1.589E-01	-1.136E-01	-7.705E-02	-4.746E-02	-2.257E-02	-3.615E-16	2.257E-02	4.746E-02	7.705E-02	1.136E-01	1.589E-01
	.5	-1.488E-01	-1.042E-01	-6.946E-02	-4.227E-02	-1.996E-02	-3.148E-16	1.996E-02	4.227E-02	6.946E-02	1.042E-01	1.488E-01
	.6	-1.354E-01	-9.185E-02	-5.973E-02	-3.577E-02	-1.675E-02	-2.603E-16	1.675E-02	3.577E-02	5.973E-02	9.185E-02	1.354E-01
	.7	-1.177E-01	-7.591E-02	-4.768E-02	-2.799E-02	-1.298E-02	-1.994E-16	1.298E-02	2.799E-02	4.768E-02	7.591E-02	1.177E-01
	.8	-9.416E-02	-5.553E-02	-3.326E-02	-1.910E-02	-8.769E-03	-1.337E-16	8.769E-03	1.910E-02	3.326E-02	5.553E-02	9.416E-02
	.9	-6.105E-02	-2.985E-02	-1.692E-02	-9.533E-03	-4.344E-03	-6.590E-17	4.344E-03	9.533E-03	1.692E-02	2.985E-02	6.105E-02
	1.0	2.318E-06	-5.881E-07	-3.473E-07	-2.000E-07	-9.214E-08	-1.420E-21	9.214E-08	2.000E-07	3.473E-07	5.881E-07	-2.318E-06

$G_2(r, z, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	1.638E-02	1.730E-02	2.016E-02	2.525E-02	3.309E-02	4.440E-02	6.016E-02	8.155E-02	1.098E-01	1.462E-01	1.916E-01
	.1	1.614E-02	1.705E-02	1.988E-02	2.491E-02	3.265E-02	4.384E-02	5.945E-02	8.067E-02	1.088E-01	1.451E-01	1.904E-01
	.2	1.546E-02	1.633E-02	1.904E-02	2.388E-02	3.134E-02	4.215E-02	5.731E-02	7.802E-02	1.057E-01	1.416E-01	1.868E-01
	.3	1.434E-02	1.515E-02	1.768E-02	2.221E-02	2.920E-02	3.939E-02	5.376E-02	7.360E-02	1.004E-01	1.357E-01	1.806E-01
	.4	1.284E-02	1.357E-02	1.586E-02	1.994E-02	2.629E-02	3.560E-02	4.886E-02	6.740E-02	9.290E-02	1.272E-01	1.717E-01
	.5	1.102E-02	1.165E-02	1.363E-02	1.717E-02	2.270E-02	3.088E-02	4.266E-02	5.944E-02	8.309E-02	1.154E-01	1.598E-01
	.6	8.953E-03	9.471E-03	1.109E-02	1.400E-02	1.856E-02	2.536E-02	3.531E-02	4.977E-02	7.082E-02	1.013E-01	1.443E-01
	.7	6.724E-03	7.115E-03	8.336E-03	1.054E-02	1.402E-02	1.925E-02	2.700E-02	3.854E-02	5.601E-02	8.303E-02	1.244E-01
	.8	4.425E-03	4.683E-03	5.492E-03	6.956E-03	9.274E-03	1.278E-02	1.804E-02	2.606E-02	3.875E-02	6.021E-02	9.858E-02
	.9	2.153E-03	2.279E-03	2.674E-03	3.390E-03	4.526E-03	6.254E-03	8.870E-03	1.292E-02	1.959E-02	3.213E-02	6.320E-02
	1.0	4.759E-08	5.036E-08	5.900E-08	7.462E-08	9.924E-08	1.363E-07	1.914E-07	2.746E-07	4.063E-07	6.385E-07	-2.270E-06

$G_3(r, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02	6.378E-02
	.1	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02	6.314E-02
	.2	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02	6.122E-02
	.3	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02	5.804E-02
	.4	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02
	.5	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02	4.783E-02
	.6	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02	4.082E-02
	.7	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02	3.253E-02
	.8	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02	2.296E-02
	.9	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02	1.212E-02
	1.0	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07	2.311E-07

$G_4(r, z, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	2.072E-17	-2.653E-03	-5.011E-03	-6.835E-03	-7.978E-03	-8.366E-03	-7.978E-03	-6.835E-03	-5.011E-03	-2.653E-03	5.739E-16
	.2	-4.330E-17	-5.425E-03	-1.023E-02	-1.394E-02	-1.625E-02	-1.703E-02	-1.625E-02	-1.394E-02	-1.023E-02	-5.425E-03	-1.800E-16
	.3	-1.446E-16	-8.440E-03	-1.588E-02	-2.158E-02	-2.511E-02	-2.630E-02	-2.511E-02	-2.158E-02	-1.588E-02	-8.440E-03	-2.887E-16
	.4	-2.288E-16	-1.186E-02	-2.223E-02	-3.007E-02	-3.487E-02	-3.649E-02	-3.487E-02	-3.007E-02	-2.223E-02	-1.186E-02	-6.388E-16
	.5	-2.789E-16	-1.589E-02	-2.958E-02	-3.974E-02	-4.587E-02	-4.791E-02	-4.587E-02	-3.974E-02	-2.958E-02	-1.589E-02	-1.212E-15
	.6	-3.260E-16	-2.084E-02	-3.839E-02	-5.101E-02	-5.845E-02	-6.089E-02	-5.845E-02	-5.101E-02	-3.839E-02	-2.084E-02	-1.135E-15
	.7	-4.647E-16	-2.724E-02	-4.923E-02	-6.433E-02	-7.295E-02	-7.574E-02	-7.295E-02	-6.433E-02	-4.923E-02	-2.724E-02	-1.014E-15
	.8	-6.502E-16	-3.611E-02	-6.297E-02	-8.018E-02	-8.966E-02	-9.267E-02	-8.966E-02	-8.018E-02	-6.297E-02	-3.611E-02	-1.918E-15
	.9	-7.151E-16	-4.964E-02	-8.071E-02	-9.903E-02	-1.088E-01	-1.118E-01	-1.088E-01	-9.903E-02	-8.071E-02	-4.964E-02	-3.002E-15
	1.0	-6.669E-16	-7.193E-02	-1.033E-01	-1.209E-01	-1.301E-01	-1.330E-01	-1.301E-01	-1.209E-01	-1.033E-01	-7.193E-02	-9.560E-15

$G_5(r, z, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-1.126E-03	-2.183E-03	-3.099E-03	-3.794E-03	-4.183E-03	-4.184E-03	-3.736E-03	-2.827E-03	-1.527E-03	6.236E-16
	.2	0.	-2.278E-03	-4.421E-03	-6.283E-03	-7.705E-03	-8.516E-03	-8.544E-03	-7.654E-03	-5.810E-03	-3.147E-03	-8.453E-17
	.3	0.	-3.482E-03	-6.764E-03	-9.633E-03	-1.185E-02	-1.315E-02	-1.326E-02	-1.194E-02	-9.118E-03	-4.958E-03	-1.572E-16
	.4	0.	-4.761E-03	-9.264E-03	-1.323E-02	-1.635E-02	-1.824E-02	-1.853E-02	-1.684E-02	-1.296E-02	-7.097E-03	-4.599E-16
	.5	0.	-6.137E-03	-1.197E-02	-1.715E-02	-2.130E-02	-2.395E-02	-2.457E-02	-2.259E-02	-1.762E-02	-9.748E-03	-9.341E-16
	.6	0.	-7.628E-03	-1.491E-02	-2.146E-02	-2.683E-02	-3.045E-02	-3.162E-02	-2.955E-02	-2.348E-02	-1.321E-02	-7.571E-16
	.7	0.	-9.247E-03	-1.812E-02	-2.621E-02	-3.301E-02	-3.787E-02	-3.994E-02	-3.811E-02	-3.111E-02	-1.800E-02	-5.327E-16
	.8	0.	-1.100E-02	-2.162E-02	-3.143E-02	-3.991E-02	-4.634E-02	-4.975E-02	-4.875E-02	-4.135E-02	-2.511E-02	-1.333E-15
	.9	0.	-1.289E-02	-2.541E-02	-3.714E-02	-4.754E-02	-5.592E-02	-6.122E-02	-6.189E-02	-5.530E-02	-3.675E-02	-2.311E-15
	1.0	0.	-1.489E-02	-2.944E-02	-4.324E-02	-5.582E-02	-6.649E-02	-7.427E-02	-7.762E-02	-7.381E-02	-5.704E-02	-8.769E-15

$G_6(r, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02	1.786E-02
	.2	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02	3.571E-02
	.3	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02	5.357E-02
	.4	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02	7.143E-02
	.5	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.929E-02
	.6	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01	1.071E-01
	.7	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.8	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01	1.429E-01
	.9	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01	1.607E-01
	1.0	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01	1.784E-01

$G_7(r, z, \lambda)$

L/R = 1.4		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-6.240E-03	-6.374E-03	-6.760E-03	-7.358E-03	-8.105E-03	-8.928E-03	-9.752E-03	-1.050E-02	-1.110E-02	-1.148E-02	-1.162E-02
	.2	-1.238E-02	-1.265E-02	-1.344E-02	-1.466E-02	-1.618E-02	-1.786E-02	-1.953E-02	-2.106E-02	-2.228E-02	-2.307E-02	-2.334E-02
	.3	-1.830E-02	-1.872E-02	-1.995E-02	-2.184E-02	-2.420E-02	-2.679E-02	-2.938E-02	-3.173E-02	-3.362E-02	-3.485E-02	-3.527E-02
	.4	-2.389E-02	-2.449E-02	-2.621E-02	-2.885E-02	-3.212E-02	-3.571E-02	-3.931E-02	-4.258E-02	-4.522E-02	-4.694E-02	-4.754E-02
	.5	-2.900E-02	-2.981E-02	-3.211E-02	-3.560E-02	-3.992E-02	-4.464E-02	-4.937E-02	-5.368E-02	-5.718E-02	-5.948E-02	-6.028E-02
	.6	-3.348E-02	-3.454E-02	-3.753E-02	-4.205E-02	-4.756E-02	-5.357E-02	-5.958E-02	-6.510E-02	-6.961E-02	-7.261E-02	-7.366E-02
	.7	-3.710E-02	-3.849E-02	-4.237E-02	-4.810E-02	-5.502E-02	-6.250E-02	-6.998E-02	-7.690E-02	-8.263E-02	-8.651E-02	-8.790E-02
	.8	-3.958E-02	-4.144E-02	-4.648E-02	-5.371E-02	-6.226E-02	-7.143E-02	-8.060E-02	-8.915E-02	-9.638E-02	-1.014E-01	-1.033E-01
	.9	-4.047E-02	-4.310E-02	-4.975E-02	-5.882E-02	-6.928E-02	-8.036E-02	-9.144E-02	-1.019E-01	-1.110E-01	-1.176E-01	-1.202E-01
	1.0	-3.882E-02	-4.317E-02	-5.208E-02	-6.337E-02	-7.598E-02	-8.918E-02	-1.024E-01	-1.150E-01	-1.263E-01	-1.352E-01	-1.395E-01

$G_1(r, z, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-1.584E-01	-1.131E-01	-7.635E-02	-4.676E-02	-2.212E-02	-2.133E-16	2.212E-02	4.676E-02	7.635E-02	1.131E-01	1.584E-01
	.1	-1.575E-01	-1.122E-01	-7.565E-02	-4.627E-02	-2.187E-02	-2.125E-16	2.187E-02	4.627E-02	7.565E-02	1.122E-01	1.575E-01
	.2	-1.548E-01	-1.096E-01	-7.353E-02	-4.481E-02	-2.113E-02	-2.097E-16	2.113E-02	4.481E-02	7.353E-02	1.096E-01	1.548E-01
	.3	-1.500E-01	-1.052E-01	-6.994E-02	-4.234E-02	-1.989E-02	-2.037E-16	1.989E-02	4.234E-02	6.994E-02	1.052E-01	1.500E-01
	.4	-1.431E-01	-9.875E-02	-6.479E-02	-3.886E-02	-1.816E-02	-1.928E-16	1.816E-02	3.886E-02	6.479E-02	9.875E-02	1.431E-01
	.5	-1.337E-01	-9.009E-02	-5.798E-02	-3.433E-02	-1.593E-02	-1.756E-16	1.593E-02	3.433E-02	5.798E-02	9.009E-02	1.337E-01
	.6	-1.213E-01	-7.885E-02	-4.941E-02	-2.879E-02	-1.325E-02	-1.510E-16	1.325E-02	2.879E-02	4.941E-02	7.885E-02	1.213E-01
	.7	-1.051E-01	-6.456E-02	-3.902E-02	-2.231E-02	-1.017E-02	-1.192E-16	1.017E-02	2.231E-02	3.902E-02	6.456E-02	1.051E-01
	.8	-8.379E-02	-4.665E-02	-2.692E-02	-1.508E-02	-6.821E-03	-8.150E-17	6.821E-03	1.508E-02	2.692E-02	4.665E-02	8.379E-02
	.9	-5.410E-02	-2.470E-02	-1.356E-02	-7.475E-03	-3.360E-03	-4.063E-17	3.360E-03	7.475E-03	1.356E-02	2.470E-02	5.410E-02
	1.0	2.013E-06	-4.922E-07	-2.816E-07	-1.586E-07	-7.209E-08	-8.415E-22	7.209E-08	1.586E-07	2.816E-07	4.922E-07	-2.013E-06

$G_2(r, z, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	8.867E-03	9.525E-03	1.159E-02	1.537E-02	2.136E-02	3.037E-02	4.348E-02	6.213E-02	8.795E-02	1.226E-01	1.673E-01
	.1	8.740E-03	9.389E-03	1.143E-02	1.515E-02	2.107E-02	2.997E-02	4.294E-02	6.143E-02	8.708E-02	1.216E-01	1.663E-01
	.2	8.365E-03	8.988E-03	1.095E-02	1.452E-02	2.021E-02	2.878E-02	4.134E-02	5.932E-02	8.448E-02	1.186E-01	1.631E-01
	.3	7.758E-03	8.336E-03	1.016E-02	1.349E-02	1.880E-02	2.684E-02	3.869E-02	5.583E-02	8.009E-02	1.135E-01	1.578E-01
	.4	6.943E-03	7.463E-03	9.099E-03	1.209E-02	1.689E-02	2.420E-02	3.505E-02	5.095E-02	7.389E-02	1.062E-01	1.500E-01
	.5	5.955E-03	6.402E-03	7.811E-03	1.040E-02	1.455E-02	2.092E-02	3.049E-02	4.473E-02	6.579E-02	9.649E-02	1.396E-01
	.6	4.834E-03	5.198E-03	6.348E-03	8.461E-03	1.187E-02	1.713E-02	2.512E-02	3.725E-02	5.576E-02	8.405E-02	1.261E-01
	.7	3.628E-03	3.902E-03	4.769E-03	6.364E-03	8.949E-03	1.296E-02	1.912E-02	2.867E-02	4.379E-02	6.847E-02	1.088E-01
	.8	2.387E-03	2.567E-03	3.139E-03	4.194E-03	5.907E-03	8.580E-03	1.273E-02	1.928E-02	3.006E-02	4.922E-02	8.618E-02
	.9	1.161E-03	1.249E-03	1.527E-03	2.042E-03	2.879E-03	4.191E-03	6.240E-03	9.517E-03	1.509E-02	2.595E-02	5.526E-02
	1.0	2.568E-08	2.762E-08	3.375E-08	4.504E-08	6.333E-08	9.172E-08	1.354E-07	2.037E-07	3.153E-07	5.199E-07	-1.987E-06

$G_3(r, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02	4.883E-02
	.1	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02	4.834E-02
	.2	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02	4.688E-02
	.3	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02	4.443E-02
	.4	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02	4.102E-02
	.5	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02	3.662E-02
	.6	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02
	.7	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02	2.490E-02
	.8	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02	1.758E-02
	.9	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03	9.278E-03
	1.0	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07	1.769E-07

$G_4(r, z, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-1.412E-16	-2.873E-03	-5.395E-03	-7.310E-03	-8.487E-03	-8.882E-03	-8.487E-03	-7.310E-03	-5.395E-03	-2.873E-03	6.897E-17
	.2	-2.218E-16	-5.854E-03	-1.097E-02	-1.484E-02	-1.721E-02	-1.800E-02	-1.721E-02	-1.484E-02	-1.097E-02	-5.854E-03	4.046E-16
	.3	-2.613E-16	-9.058E-03	-1.693E-02	-2.281E-02	-2.639E-02	-2.758E-02	-2.639E-02	-2.281E-02	-1.693E-02	-9.058E-03	3.577E-16
	.4	-2.958E-16	-1.263E-02	-2.349E-02	-3.148E-02	-3.627E-02	-3.785E-02	-3.627E-02	-3.148E-02	-2.349E-02	-1.263E-02	-5.327E-16
	.5	-3.424E-16	-1.677E-02	-3.093E-02	-4.111E-02	-4.709E-02	-4.905E-02	-4.709E-02	-4.111E-02	-3.093E-02	-1.677E-02	-7.248E-16
	.6	-4.394E-16	-2.177E-02	-3.960E-02	-5.199E-02	-5.909E-02	-6.138E-02	-5.909E-02	-5.199E-02	-3.960E-02	-2.177E-02	-8.272E-16
	.7	-5.859E-16	-2.812E-02	-5.000E-02	-6.445E-02	-7.246E-02	-7.504E-02	-7.248E-02	-6.445E-02	-5.000E-02	-2.812E-02	-1.851E-15
	.8	-6.812E-16	-3.672E-02	-6.276E-02	-7.881E-02	-8.743E-02	-9.014E-02	-8.743E-02	-7.881E-02	-6.276E-02	-3.672E-02	-2.156E-15
	.9	-6.592E-16	-4.939E-02	-7.863E-02	-9.533E-02	-1.040E-01	-1.068E-01	-1.040E-01	-9.533E-02	-7.863E-02	-4.939E-02	-3.049E-15
	1.0	-5.915E-16	-6.903E-02	-9.800E-02	-1.139E-01	-1.221E-01	-1.246E-01	-1.221E-01	-1.139E-01	-9.800E-02	-6.903E-02	-9.683E-15

$G_5(r, z, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-1.149E-03	-2.239E-03	-3.205E-03	-3.969E-03	-4.441E-03	-4.518E-03	-4.105E-03	-3.156E-03	-1.724E-03	1.242E-16
	.2	0.	-2.315E-03	-4.514E-03	-6.468E-03	-8.025E-03	-8.999E-03	-9.181E-03	-8.371E-03	-6.459E-03	-3.539E-03	5.434E-16
	.3	0.	-3.514E-03	-6.860E-03	-9.847E-03	-1.225E-02	-1.379E-02	-1.414E-02	-1.297E-02	-1.007E-02	-5.544E-03	5.845E-16
	.4	0.	-4.762E-03	-9.308E-03	-1.339E-02	-1.672E-02	-1.893E-02	-1.954E-02	-1.809E-02	-1.418E-02	-7.871E-03	-2.139E-16
	.5	0.	-6.072E-03	-1.189E-02	-1.716E-02	-2.153E-02	-2.452E-02	-2.556E-02	-2.395E-02	-1.904E-02	-1.070E-02	-3.074E-16
	.6	0.	-7.455E-03	-1.462E-02	-2.118E-02	-2.672E-02	-3.069E-02	-3.237E-02	-3.061E-02	-2.498E-02	-1.432E-02	-3.533E-16
	.7	0.	-8.917E-03	-1.753E-02	-2.549E-02	-3.236E-02	-3.752E-02	-4.012E-02	-3.496E-02	-3.247E-02	-1.920E-02	-1.319E-15
	.8	0.	-1.046E-02	-2.062E-02	-3.011E-02	-3.847E-02	-4.507E-02	-4.896E-02	-4.870E-02	-4.214E-02	-2.625E-02	-1.569E-15
	.9	0.	-1.209E-02	-2.389E-02	-3.503E-02	-4.508E-02	-5.338E-02	-5.897E-02	-6.030E-02	-5.474E-02	-3.729E-02	-2.383E-15
	1.0	0.	-1.378E-02	-2.729E-02	-4.019E-02	-5.207E-02	-6.232E-02	-7.004E-02	-7.372E-02	-7.071E-02	-5.524E-02	-8.945E-15

$G_6(r, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02	1.562E-02
	.2	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02
	.3	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02	4.687E-02
	.4	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02
	.5	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02	7.812E-02
	.6	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02	9.375E-02
	.7	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01	1.094E-01
	.8	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01
	.9	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01	1.406E-01
	1.0	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01	1.561E-01

$G_7(r, z, \lambda)$

L/R = 1.6		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-4.937E-03	-5.082E-03	-5.500E-03	-6.141E-03	-6.937E-03	-7.812E-03	-8.687E-03	-9.484E-03	-1.012E-02	-1.054E-02	-1.069E-02
	.2	-9.788E-03	-1.008E-02	-1.093E-02	-1.224E-02	-1.385E-02	-1.563E-02	-1.740E-02	-1.901E-02	-2.032E-02	-2.117E-02	-2.146E-02
	.3	-1.446E-02	-1.492E-02	-1.623E-02	-1.824E-02	-2.072E-02	-2.344E-02	-2.616E-02	-2.863E-02	-3.064E-02	-3.195E-02	-3.241E-02
	.4	-1.886E-02	-1.950E-02	-2.133E-02	-2.410E-02	-2.752E-02	-3.125E-02	-3.498E-02	-3.840E-02	-4.117E-02	-4.300E-02	-4.364E-02
	.5	-2.288E-02	-2.373E-02	-2.614E-02	-2.978E-02	-3.422E-02	-3.906E-02	-4.390E-02	-4.835E-02	-5.198E-02	-5.440E-02	-5.525E-02
	.6	-2.637E-02	-2.748E-02	-3.059E-02	-3.522E-02	-4.081E-02	-4.688E-02	-5.294E-02	-5.853E-02	-6.316E-02	-6.627E-02	-6.738E-02
	.7	-2.918E-02	-3.062E-02	-3.459E-02	-4.037E-02	-4.727E-02	-5.469E-02	-6.211E-02	-6.900E-02	-7.478E-02	-7.875E-02	-8.019E-02
	.8	-3.109E-02	-3.299E-02	-3.806E-02	-4.521E-02	-5.358E-02	-6.250E-02	-7.142E-02	-7.979E-02	-8.694E-02	-9.201E-02	-9.391E-02
	.9	-3.174E-02	-3.439E-02	-4.092E-02	-4.970E-02	-5.973E-02	-7.031E-02	-8.090E-02	-9.092E-02	-9.970E-02	-1.062E-01	-1.089E-01
	1.0	-3.042E-02	-3.463E-02	-4.313E-02	-5.380E-02	-6.565E-02	-7.803E-02	-9.042E-02	-1.023E-01	-1.129E-01	-1.214E-01	-1.256E-01

$G_1(r, z, \lambda)$

L/R = 1.8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-1.437E-01	-9.920E-02	-6.480E-02	-3.858E-02	-1.791E-02	-2.659E-16	1.791E-02	3.858E-02	6.480E-02	9.920E-02	1.437E-01
	.1	-1.429E-01	-9.841E-02	-6.417E-02	-3.815E-02	-1.769E-02	-2.628E-16	1.769E-02	3.815E-02	6.417E-02	9.841E-02	1.429E-01
	.2	-1.403E-01	-9.600E-02	-6.225E-02	-3.686E-02	-1.706E-02	-2.533E-16	1.706E-02	3.686E-02	6.225E-02	9.600E-02	1.403E-01
	.3	-1.359E-01	-9.192E-02	-5.902E-02	-3.471E-02	-1.600E-02	-2.375E-16	1.600E-02	3.471E-02	5.902E-02	9.192E-02	1.359E-01
	.4	-1.295E-01	-8.602E-02	-5.443E-02	-3.170E-02	-1.453E-02	-2.155E-16	1.453E-02	3.170E-02	5.443E-02	8.602E-02	1.295E-01
	.5	-1.208E-01	-7.814E-02	-4.843E-02	-2.784E-02	-1.267E-02	-1.877E-16	1.267E-02	2.784E-02	4.843E-02	7.814E-02	1.208E-01
	.6	-1.094E-01	-6.800E-02	-4.098E-02	-2.318E-02	-1.047E-02	-1.548E-16	1.047E-02	2.318E-02	4.098E-02	6.800E-02	1.094E-01
	.7	-9.465E-02	-5.525E-02	-3.209E-02	-1.783E-02	-7.991E-03	-1.179E-16	7.991E-03	1.783E-02	3.209E-02	5.525E-02	9.465E-02
	.8	-7.527E-02	-3.952E-02	-2.195E-02	-1.198E-02	-5.329E-03	-7.845E-17	5.329E-03	1.198E-02	2.195E-02	3.952E-02	7.527E-02
	.9	-4.847E-02	-2.068E-02	-1.098E-02	-5.909E-03	-2.615E-03	-3.844E-17	2.615E-03	5.909E-03	1.098E-02	2.068E-02	4.847E-02
	1.0	1.781E-06	-4.159E-07	-2.301E-07	-1.265E-07	-5.657E-08	-8.341E-22	5.657E-08	1.265E-07	2.301E-07	4.159E-07	-1.781E-06

$G_2(r, z, \lambda)$

L/R = 1.8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	4.875E-03	5.337E-03	6.807E-03	9.557E-03	1.408E-02	2.117E-02	3.199E-02	4.814E-02	7.161E-02	1.045E-01	1.486E-01
	.1	4.805E-03	5.260E-03	6.710E-03	9.422E-03	1.389E-02	2.089E-02	3.150E-02	4.757E-02	7.088E-02	1.037E-01	1.477E-01
	.2	4.599E-03	5.034E-03	6.424E-03	9.023E-03	1.331E-02	2.004E-02	3.036E-02	4.589E-02	6.868E-02	1.010E-01	1.449E-01
	.3	4.264E-03	4.668E-03	5.959E-03	8.376E-03	1.237E-02	1.866E-02	2.836E-02	4.309E-02	6.498E-02	9.659E-02	1.401E-01
	.4	3.815E-03	4.177E-03	5.334E-03	7.505E-03	1.110E-02	1.679E-02	2.563E-02	3.920E-02	5.977E-02	9.020E-02	1.333E-01
	.5	3.270E-03	3.582E-03	4.576E-03	6.445E-03	9.547E-03	1.448E-02	2.222E-02	3.428E-02	5.301E-02	8.172E-02	1.240E-01
	.6	2.654E-03	2.907E-03	3.717E-03	5.239E-03	7.774E-03	1.183E-02	1.825E-02	2.842E-02	4.470E-02	7.093E-02	1.121E-01
	.7	1.991E-03	2.182E-03	2.790E-03	3.936E-03	5.850E-03	8.928E-03	1.384E-02	2.177E-02	3.489E-02	5.743E-02	9.664E-02
	.8	1.310E-03	1.435E-03	1.836E-03	2.592E-03	3.857E-03	5.899E-03	9.186E-03	1.457E-02	2.378E-02	4.095E-02	7.657E-02
	.9	6.368E-04	6.978E-04	8.930E-04	1.261E-03	1.879E-03	2.878E-03	4.494E-03	7.170E-03	1.187E-02	2.137E-02	4.911E-02
	1.0	1.410E-08	1.544E-08	1.975E-08	2.786E-08	4.141E-08	6.318E-08	9.798E-08	1.544E-07	2.499E-07	4.313E-07	-1.767E-06

$G_3(r, \lambda)$

L/R = 1.8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	3.856E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02	3.858E-02
	.1	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02	3.819E-02
	.2	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02	3.704E-02
	.3	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02	3.511E-02
	.4	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02	3.241E-02
	.5	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02	2.894E-02
	.6	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02	2.469E-02
	.7	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02	1.968E-02
	.8	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02
	.9	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03	7.330E-03
	1.0	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07	1.398E-07

$G_4(r, z, \lambda)$

L/R = 1.8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	-3.294E-17	-3.009E-03	-5.608E-03	-7.533E-03	-8.689E-03	-9.071E-03	-8.689E-03	-7.533E-03	-5.608E-03	-3.009E-03	5.497E-16
.2	-2.164E-17	-6.118E-03	-1.138E-02	-1.525E-02	-1.756E-02	-1.832E-02	-1.756E-02	-1.525E-02	-1.138E-02	-6.118E-03	2.294E-16
.3	4.366E-18	-9.435E-03	-1.748E-02	-2.333E-02	-2.678E-02	-2.792E-02	-2.678E-02	-2.333E-02	-1.748E-02	-9.435E-03	-4.979E-16
.4	-8.665E-18	-1.310E-02	-2.411E-02	-3.197E-02	-3.655E-02	-3.804E-02	-3.655E-02	-3.197E-02	-2.411E-02	-1.310E-02	-7.219E-16
.5	-9.856E-17	-1.729E-02	-3.151E-02	-4.138E-02	-4.702E-02	-4.884E-02	-4.702E-02	-4.138E-02	-3.151E-02	-1.729E-02	-1.179E-15
.6	-3.020E-16	-2.229E-02	-3.997E-02	-5.179E-02	-5.837E-02	-6.046E-02	-5.837E-02	-5.179E-02	-3.997E-02	-2.229E-02	-1.732E-15
.7	-5.971E-16	-2.854E-02	-4.989E-02	-6.343E-02	-7.073E-02	-7.303E-02	-7.073E-02	-6.343E-02	-4.989E-02	-2.854E-02	-2.846E-15
.8	-8.559E-16	-3.685E-02	-6.175E-02	-7.650E-02	-8.421E-02	-8.661E-02	-8.421E-02	-7.650E-02	-6.175E-02	-3.685E-02	-3.007E-15
.9	-9.632E-16	-4.872E-02	-7.605E-02	-9.115E-02	-9.886E-02	-1.012E-01	-9.886E-02	-9.115E-02	-7.605E-02	-4.872E-02	-3.993E-15
1.0	-9.250E-16	-6.622E-02	-9.296E-02	-1.073E-01	-1.145E-01	-1.167E-01	-1.145E-01	-1.073E-01	-9.296E-02	-6.622E-02	-1.037E-14

$G_5(r, z, \lambda)$

L/R = 1.8	Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R 0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
.1	0.	-1.130E-03	-2.213E-03	-3.192E-03	-3.997E-03	-4.536E-03	-4.692E-03	-4.341E-03	-3.395E-03	-1.878E-03	6.424E-16
.2	0.	-2.272E-03	-4.449E-03	-6.424E-03	-8.056E-03	-9.160E-03	-9.502E-03	-8.824E-03	-6.928E-03	-3.846E-03	3.989E-16
.3	0.	-3.434E-03	-6.732E-03	-9.734E-03	-1.223E-02	-1.396E-02	-1.455E-02	-1.359E-02	-1.075E-02	-6.001E-03	-2.490E-16
.4	0.	-4.627E-03	-9.081E-03	-1.316E-02	-1.659E-02	-1.902E-02	-1.996E-02	-1.881E-02	-1.503E-02	-8.471E-03	-3.780E-16
.5	0.	-5.860E-03	-1.152E-02	-1.673E-02	-2.117E-02	-2.442E-02	-2.585E-02	-2.466E-02	-1.999E-02	-1.143E-02	-7.547E-16
.6	0.	-7.138E-03	-1.405E-02	-2.047E-02	-2.603E-02	-3.023E-02	-3.234E-02	-3.133E-02	-2.593E-02	-1.515E-02	-1.230F-15
.7	0.	-8.465E-03	-1.669E-02	-2.439E-02	-3.119E-02	-3.651E-02	-3.954E-02	-3.903E-02	-3.320E-02	-2.007E-02	-2.248E-15
.8	0.	-9.845E-03	-1.945E-02	-2.852E-02	-3.667E-02	-4.331E-02	-4.755E-02	-4.798E-02	-4.230E-02	-2.701E-02	-2.334E-15
.9	0.	-1.128E-02	-2.232E-02	-3.284E-02	-4.247E-02	-5.062E-02	-5.639E-02	-5.831E-02	-5.373E-02	-3.745E-02	-3.255E-15
1.0	0.	-1.274E-02	-2.526E-02	-3.730E-02	-4.851E-02	-5.835E-02	-6.596E-02	-6.995E-02	-6.770E-02	-5.348E-02	-9.575E-15

$G_6(r, \lambda)$

L/R = 1.8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.399E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02	1.389E-02
	.2	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02	2.778E-02
	.3	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02	4.167E-02
	.4	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02	5.556E-02
	.5	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02	6.944E-02
	.6	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02	8.333E-02
	.7	9.722E-02	9.722E-02	9.722E-02	9.722E-02	9.722E-02	9.722E-02	9.722E-02	9.722E-02	9.722E-02	8.333E-02	8.333E-02
	.8	1.111E-01	1.111E-01	1.111E-01	1.111E-01	1.111E-01	1.111E-01	1.111E-01	1.111E-01	1.111E-01	9.722E-02	9.722E-02
	.9	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.250E-01	1.111E-01	1.111E-01
	1.0	1.387E-01	1.387E-01	1.387E-01	1.387E-01	1.387E-01	1.387E-01	1.387E-01	1.387E-01	1.397E-01	1.250E-01	1.250E-01

$G_7(r, z, \lambda)$

L/R = 1.8		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-3.981E-03	-4.133E-03	-4.569E-03	-5.232E-03	-6.050E-03	-6.944E-03	-7.839E-03	-8.656E-03	-9.319E-03	-9.755E-03	-9.907E-03
	.2	-7.891E-03	-8.200E-03	-9.085E-03	-1.043E-02	-1.208E-02	-1.389E-02	-1.570E-02	-1.735E-02	-1.869E-02	-1.958E-02	-1.989E-02
	.3	-1.165E-02	-1.213E-02	-1.349E-02	-1.555E-02	-1.808E-02	-2.083E-02	-2.359E-02	-2.611E-02	-2.817E-02	-2.953E-02	-3.001E-02
	.4	-1.519E-02	-1.586E-02	-1.774E-02	-2.057E-02	-2.402E-02	-2.778E-02	-3.153E-02	-3.498E-02	-3.782E-02	-3.970E-02	-4.037E-02
	.5	-1.841E-02	-1.929E-02	-2.176E-02	-2.545E-02	-2.990E-02	-3.472E-02	-3.955E-02	-4.400E-02	-4.768E-02	-5.015E-02	-5.103E-02
	.6	-2.121E-02	-2.234E-02	-2.551E-02	-3.014E-02	-3.569E-02	-4.167E-02	-4.764E-02	-5.319E-02	-5.753E-02	-6.099E-02	-6.213E-02
	.7	-2.345E-02	-2.491E-02	-2.891E-02	-3.463E-02	-4.138E-02	-4.861E-02	-5.584E-02	-6.259E-02	-6.832E-02	-7.231E-02	-7.378E-02
	.8	-2.495E-02	-2.688E-02	-3.191E-02	-3.889E-02	-4.697E-02	-5.556E-02	-6.414E-02	-7.222E-02	-7.920E-02	-8.423E-02	-8.616E-02
	.9	-2.546E-02	-2.810E-02	-3.447E-02	-4.290E-02	-5.246E-02	-6.250E-02	-7.254E-02	-8.210E-02	-9.053E-02	-9.690E-02	-9.954E-02
	1.0	-2.439E-02	-2.845E-02	-3.655E-02	-4.663E-02	-5.777E-02	-6.936E-02	-8.096E-02	-9.209E-02	-1.022E-01	-1.103E-01	-1.143E-01

$G_1(r, z, \lambda)$

L/R = 2.0		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	-1.310E-01	-8.724E-02	-5.497E-02	-3.171E-02	-1.441E-02	-1.440E-16	1.441E-02	3.171E-02	5.497E-02	8.724E-02	1.310E-01
	.1	-1.302E-01	-8.651E-02	-5.440E-02	-3.134E-02	-1.423E-02	-1.425E-16	1.423E-02	3.134E-02	5.440E-02	8.651E-02	1.302E-01
	.2	-1.278E-01	-8.431E-02	-5.269E-02	-3.023E-02	-1.369E-02	-1.380E-16	1.369E-02	3.023E-02	5.269E-02	8.431E-02	1.278E-01
	.3	-1.237E-01	-8.058E-02	-4.983E-02	-2.839E-02	-1.281E-02	-1.304E-16	1.281E-02	2.839E-02	4.983E-02	8.058E-02	1.237E-01
	.4	-1.178E-01	-7.521E-02	-4.578E-02	-2.582E-02	-1.159E-02	-1.194E-16	1.159E-02	2.582E-02	4.578E-02	7.521E-02	1.178E-01
	.5	-1.098E-01	-6.807E-02	-4.054E-02	-2.257E-02	-1.006E-02	-1.051E-16	1.006E-02	2.257E-02	4.054E-02	6.807E-02	1.098E-01
	.6	-9.935E-02	-5.894E-02	-3.410E-02	-1.869E-02	-8.277E-03	-8.750E-17	8.277E-03	1.869E-02	3.410E-02	5.894E-02	9.935E-02
	.7	-8.585E-02	-4.758E-02	-2.653E-02	-1.430E-02	-6.288E-03	-6.719E-17	6.288E-03	1.430E-02	2.653E-02	4.758E-02	8.585E-02
	.8	-6.818E-02	-3.374E-02	-1.802E-02	-9.562E-03	-4.177E-03	-4.501E-17	4.177E-03	9.562E-03	1.802E-02	3.374E-02	6.818E-02
	.9	-4.384E-02	-1.749E-02	-8.967E-03	-4.701E-03	-2.045E-03	-2.215E-17	2.045E-03	4.701E-03	8.967E-03	1.749E-02	4.384E-02
	1.0	1.598E-06	-3.544E-07	-1.894E-07	-1.013E-07	-4.450E-08	-4.750E-22	4.450E-08	1.013E-07	1.894E-07	3.544E-07	-1.598E-06

$G_2(r, z, \lambda)$

L/R = 2.0		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	2.713E-03	3.033E-03	4.064E-03	6.046E-03	9.430E-03	1.497E-02	2.384E-02	3.776E-02	5.903E-02	9.028E-02	1.337E-01
	.1	2.674E-03	2.989E-03	4.006E-03	5.960E-03	9.298E-03	1.477E-02	2.353E-02	3.730E-02	5.841E-02	8.950E-02	1.329E-01
	.2	2.559E-03	2.860E-03	3.834E-03	5.706E-03	8.907E-03	1.416E-02	2.260E-02	3.594E-02	5.653E-02	8.717E-02	1.304E-01
	.3	2.372E-03	2.652E-03	3.555E-03	5.294E-03	8.271E-03	1.317E-02	2.108E-02	3.368E-02	5.338E-02	8.323E-02	1.261E-01
	.4	2.122E-03	2.372E-03	3.182E-03	4.740E-03	7.414E-03	1.183E-02	1.900E-02	3.056E-02	4.897E-02	7.758E-02	1.199E-01
	.5	1.819E-03	2.034E-03	2.728E-03	4.068E-03	6.371E-03	1.019E-02	1.644E-02	2.664E-02	4.327E-02	7.010E-02	1.116E-01
	.6	1.476E-03	1.650E-03	2.215E-03	3.304E-03	5.181E-03	8.305E-03	1.346E-02	2.200E-02	3.631E-02	6.059E-02	1.008E-01
	.7	1.107E-03	1.238E-03	1.662E-03	2.481E-03	3.895E-03	6.257E-03	1.018E-02	1.678E-02	2.819E-02	4.882E-02	8.696E-02
	.8	7.280E-04	8.142E-04	1.093E-03	1.633E-03	2.566E-03	4.129E-03	6.743E-03	1.119E-02	1.912E-02	3.456E-02	6.891E-02
	.9	3.540E-04	3.959E-04	5.317E-04	7.944E-04	1.249E-03	2.012E-03	3.294E-03	5.495E-03	9.499E-03	1.788E-02	4.419E-02
	1.0	7.838E-09	8.764E-09	1.177E-08	1.756E-08	2.757E-08	4.428E-08	7.207E-08	1.189E-07	2.012E-07	3.632E-07	-1.590E-06

$G_3(r, \lambda)$

L/R = 2.0		Z/L										
		0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02	3.125E-02
	.1	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02	3.094E-02
	.2	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02	3.000E-02
	.3	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02	2.844E-02
	.4	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02	2.625E-02
	.5	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02	2.344E-02
	.6	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02	2.000E-02
	.7	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02	1.594E-02
	.8	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02	1.125E-02
	.9	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03	5.938E-03
	1.0	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07	1.132E-07

$G_4(r, z, \lambda)$

L/R = 2.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-2.581E-17	-3.089E-03	-5.705E-03	-7.585E-03	-8.682E-03	-9.038E-03	-8.682E-03	-7.585E-03	-5.705E-03	-3.089E-03	-1.046E-16
	.2	-5.794E-17	-6.272E-03	-1.155E-02	-1.532E-02	-1.750E-02	-1.821E-02	-1.750E-02	-1.532E-02	-1.155E-02	-6.272E-03	-5.295E-16
	.3	-7.312E-17	-9.651E-03	-1.770E-02	-2.335E-02	-2.660E-02	-2.764E-02	-2.660E-02	-2.335E-02	-1.770E-02	-9.651E-03	-1.159E-15
	.4	-6.768E-17	-1.336E-02	-2.431E-02	-3.185E-02	-3.610E-02	-3.746E-02	-3.610E-02	-3.185E-02	-2.431E-02	-1.336E-02	-1.046E-15
	.5	-9.833E-17	-1.756E-02	-3.159E-02	-4.096E-02	-4.614E-02	-4.778E-02	-4.614E-02	-4.096E-02	-3.159E-02	-1.756E-02	-9.023E-16
	.6	-2.145E-16	-2.253E-02	-3.979E-02	-5.086E-02	-5.683E-02	-5.870E-02	-5.683E-02	-5.086E-02	-3.979E-02	-2.253E-02	-1.281E-15
	.7	-3.704E-16	-2.866E-02	-4.923E-02	-6.172E-02	-6.827E-02	-7.029E-02	-6.827E-02	-6.172E-02	-4.923E-02	-2.866E-02	-2.021E-15
	.8	-4.661E-16	-3.669E-02	-6.026E-02	-7.368E-02	-8.051E-02	-8.261E-02	-8.051E-02	-7.368E-02	-6.026E-02	-3.669E-02	-2.705E-15
	.9	-4.676E-16	-4.783E-02	-7.323E-02	-8.681E-02	-9.359E-02	-9.565E-02	-9.359E-02	-8.681E-02	-7.323E-02	-4.783E-02	-3.684E-15
	1.0	-4.271E-16	-6.356E-02	-8.820E-02	-1.010E-01	-1.073E-01	-1.092E-01	-1.073E-01	-1.010E-01	-8.820E-02	-6.356E-02	-9.724E-15

$G_5(r, z, \lambda)$

L/R = 2.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	0.	-1.089E-03	-2.140E-03	-3.108E-03	-3.931E-03	-4.519E-03	-4.751E-03	-4.477E-03	-3.565E-03	-2.000E-03	-7.333E-17
	.2	0.	-2.184E-03	-4.295E-03	-6.243E-03	-7.905E-03	-9.105E-03	-9.598E-03	-9.077E-03	-7.259E-03	-4.088E-03	-4.562E-16
	.3	0.	-3.293E-03	-6.479E-03	-9.430E-03	-1.196E-02	-1.382E-02	-1.463E-02	-1.392E-02	-1.122E-02	-6.355E-03	-1.030E-15
	.4	0.	-4.421E-03	-8.707E-03	-1.269E-02	-1.615E-02	-1.873E-02	-1.995E-02	-1.915E-02	-1.560E-02	-8.936E-03	-8.546E-16
	.5	0.	-5.574E-03	-1.099E-02	-1.605E-02	-2.049E-02	-2.389E-02	-2.565E-02	-2.491E-02	-2.060E-02	-1.193E-02	-6.562E-16
	.6	0.	-6.755E-03	-1.334E-02	-1.952E-02	-2.502E-02	-2.935E-02	-3.182E-02	-3.134E-02	-2.646E-02	-1.577E-02	-9.943E-16
	.7	0.	-7.967E-03	-1.575E-02	-2.312E-02	-2.975E-02	-3.515E-02	-3.651E-02	-3.860E-02	-3.348E-02	-2.070E-02	-1.706E-15
	.8	0.	-9.212E-03	-1.824E-02	-2.685E-02	-3.471E-02	-4.130E-02	-4.581E-02	-4.683E-02	-4.202E-02	-2.748E-02	-2.353E-15
	.9	0.	-1.049E-02	-2.080E-02	-3.070E-02	-3.988E-02	-4.782E-02	-5.371E-02	-5.611E-02	-5.244E-02	-3.734E-02	-3.267E-15
	1.0	0.	-1.178E-02	-2.339E-02	-3.463E-02	-4.520E-02	-5.462E-02	-6.212E-02	-6.636E-02	-6.480E-02	-5.178E-02	-9.227E-15

$G_6(r, \lambda)$

L/R = 2.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02	1.250E-02
	.2	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02	2.500E-02
	.3	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02	3.750E-02
	.4	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02
	.5	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02	6.250E-02
	.6	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02	7.500E-02
	.7	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02	8.750E-02
	.8	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01	1.000E-01
	.9	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01	1.125E-01
	1.0	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01	1.249E-01

$G_7(r, z, \lambda)$

L/R = 2.0		Z/L 0.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
r/R	0.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	.1	-3.265E-03	-3.422E-03	-3.867E-03	-4.538E-03	-5.358E-03	-6.250E-03	-7.142E-03	-7.961E-03	-8.633E-03	-9.078E-03	-9.234E-03
	.2	-6.471E-03	-6.789E-03	-7.692E-03	-9.049E-03	-1.070E-02	-1.250E-02	-1.430E-02	-1.595E-02	-1.731E-02	-1.821E-02	-1.853E-02
	.3	-9.555E-03	-1.004E-02	-1.143E-02	-1.350E-02	-1.602E-02	-1.875E-02	-2.148E-02	-2.400E-02	-2.607E-02	-2.745E-02	-2.794E-02
	.4	-1.245E-02	-1.313E-02	-1.504E-02	-1.788E-02	-2.130E-02	-2.500E-02	-2.870E-02	-3.212E-02	-3.496E-02	-3.687E-02	-3.755E-02
	.5	-1.508E-02	-1.598E-02	-1.847E-02	-2.214E-02	-2.653E-02	-3.125E-02	-3.597E-02	-4.036E-02	-4.403E-02	-4.652E-02	-4.742E-02
	.6	-1.736E-02	-1.852E-02	-2.169E-02	-2.627E-02	-3.169E-02	-3.750E-02	-4.331E-02	-4.873E-02	-5.331E-02	-5.648E-02	-5.764E-02
	.7	-1.919E-02	-2.067E-02	-2.464E-02	-3.025E-02	-3.679E-02	-4.375E-02	-5.071E-02	-5.725E-02	-6.286E-02	-6.683E-02	-6.831E-02
	.8	-2.041E-02	-2.234E-02	-2.729E-02	-3.405E-02	-4.181E-02	-5.000E-02	-5.819E-02	-6.595E-02	-7.271E-02	-7.766E-02	-7.959E-02
	.9	-2.081E-02	-2.343E-02	-2.961E-02	-3.769E-02	-4.675E-02	-5.625E-02	-6.575E-02	-7.481E-02	-8.289E-02	-8.907E-02	-9.169E-02
	1.0	-1.993E-02	-2.385E-02	-3.158E-02	-4.111E-02	-5.157E-02	-6.243E-02	-7.329E-02	-8.375E-02	-9.327E-02	-1.010E-01	-1.049E-01