

**H- and auxiliary functions for phase functions of the type**

$$p(\cos \theta) = \omega_0 + \omega_1 P_1(\cos \theta) + \omega_2 P_2(\cos \theta)$$

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**Abstract.** *H*- and auxiliary functions are tabulated for nonconservative scattering for phase functions of type  $p(\cos \theta) = \omega_0 + \omega_1 P_1(\cos \theta) + \omega_2 P_2(\cos \theta)$ . They have been computed for 15 values of the single scattering albedo and for 37 pairs of  $\bar{\omega}_1 = \omega_1/\omega_0$  and  $\bar{\omega}_2 = \omega_2/\omega_0$ .

**Key words :** Radiative transfer—*H*-functions

### Introduction

The *H*-functions, first introduced by Chandrasekhar (1960), have played an important role in radiative transfer theory. These functions were originally introduced for an isotropically scattering semi-infinite atmosphere. In addition to the *H*-functions, auxiliary functions are required when a two- or three-term phase function is used (*e.g.* Chandrasekhar 1960, chapter 6).

The solution for the three-term phase function  $p(\cos \theta) = \omega_0 + \omega_1 P_1(\cos \theta) + \omega_2 P_2(\cos \theta)$ , where  $\omega_0$  is single scattering albedo,  $\omega_1$  and  $\omega_2$  are constants, and  $P_{1,2}$  are the first two Legendre polynomials, was given by Chandrasekhar (1960) for the conservative case in which  $\omega_0 = 1$ . Horak & Chandrasekhar (1961 ≡ Paper I) extended the solution to the general case of nonconservative scattering ( $\omega_0 < 1$ ). The relevant tables for the conservative case are given by Horak & Janousek (1965).

For an incident flux  $\pi F$  in the direction  $(-\mu_0, \varphi_0)$ , the reflected intensity in the direction  $(\mu, \varphi)$  is given by (*cf.* Paper I)

$$I(\mu, \varphi; \mu_0, \varphi_0) = \frac{F}{4\mu} S(\mu, \varphi; \mu_0, \varphi_0), \quad \dots(1)$$

where

$$\begin{aligned} \left(\frac{1}{\mu} + \frac{1}{\mu_0}\right) S(\mu, \varphi; \mu_0, \varphi_0) = & -\omega_1 \chi(\mu) \chi(\mu_0) + \frac{3}{\xi} \omega_0 \varphi(\mu) \varphi(\mu_0) \\ & + \frac{3}{4} \frac{\omega_2}{\xi} \psi(\mu) \psi(\mu_0) + (1 - \mu^2)^{1/2} (1 - \mu_0^2)^{1/2} [\omega_1 \theta(\mu) \theta(\mu_0) \\ & - 3\omega_2 \sigma(\mu) \sigma(\mu_0)] \cos(\varphi_0 - \varphi) + (1 - \mu^2) (1 - \mu_0^2) \\ & \times \frac{3H^{(2)}}{4}(\mu) H^{(2)}(\mu_0) \cos^2(\varphi_0 - \varphi). \end{aligned}$$

The various functions in equation (1) have been defined in Paper I. Our aim here is to compute these functions. We have computed them for the nonconservative case for 15 values of  $\varpi_0$  and for 37 combinations of  $\bar{\varpi}_1 = \varpi_1/\varpi_0$  and  $\bar{\varpi}_2 = \varpi_2/\varpi_0$  given in table 1 covering the whole allowable range of these parameters (see below). These computations will be useful, for example, for studying multiple scattering effects and for computing line profiles formed by anisotropic scattering (e.g. Bhatia & Abhyankar 1983).

Table 1. The parameters  $\bar{\varpi}_1$  and  $\bar{\varpi}_2$  chosen for computations

$\bar{\varpi}_1$	$\bar{\varpi}_2$
0.0	1.95
0.0, $\pm 0.5$ , $\pm 1.0 \pm 1.45$	1.50
1.6	1.30
0.0, $\pm 0.5$ , $\pm 1.0$ , $\pm 1.45 \pm 1.7$	1.00
-1.3	0.6
0.0, $\pm 0.5$ , $\pm 1.0$ , $\pm 1.45$	0.50
0.0, $\pm 0.25$ , $\pm 0.45$	-0.50
0.0, $\pm 0.20$ , $\pm 0.70$	-0.75
0.0	-0.95

2. Choice of the parameters  $\bar{\varpi}_1$  and  $\bar{\varpi}_2$

To get phase functions of different shapes, we have to use different combinations of  $\bar{\varpi}_1$  and  $\bar{\varpi}_2$ . This leads us to enquire about the limits on their values.

We know that the phase function represents the probability of radiation being scattered in a direction inclined at an angle  $\theta$  to that of the original direction of the radiation, which necessarily implies that  $p(\cos \theta)$  should be positive for all scattering angles. Dawn & Chen (1977) have already considered this constraint. However, since their notation and approach are different, we give below a short derivation of the conditions obtained by them. Writing

$$p(\cos \theta) = \varpi_0(1 + \bar{\varpi}_1 \cos \theta + \bar{\varpi}_2(3 \cos^2 \theta - 1)/2) = \varpi_0 f(\theta),$$

and noting the condition  $\varpi_0 \in (0, 1)$ , we require that

$$f(\theta) = 1 + \bar{\varpi}_1 \cos \theta + \bar{\varpi}_2(3 \cos^2 \theta - 1)/2 \geq 0. \tag{2}$$

Now  $f(\theta)$  has optima at  $\theta_1 = 0$ ,  $\theta_2 = \pi$  and  $\theta_3 = \cos^{-1}(-\bar{\varpi}_1/3\bar{\varpi}_2)$ . A consideration of the second derivative of  $f(\theta)$  then indicates that we can divide the  $\bar{\varpi}_1 - \bar{\varpi}_2$  plane into four sectors as shown in figure 1.

Sector B'OD': Here  $f(\theta_1)$  is maximum,  $f(\theta_2)$  is minimum and  $\theta_3$  does not exist; sector D'OH': Here  $f(\theta_3)$  is minimum and both  $f(\theta_1)$  and  $f(\theta_2)$  are maxima; sector H'OJ': Here  $f(\theta_1)$  is minimum,  $f(\theta_2)$  is maximum and  $\theta_3$  does not exist; sector J'OB': Here  $f(\theta_3)$  is maximum and both  $f(\theta_1)$  and  $f(\theta_2)$  are minima. Since their values are  $1 \pm \bar{\varpi}_1 \pm \bar{\varpi}_2$ , we see that  $f(\theta_1)$  is the deeper minimum when  $\bar{\varpi}_1 < 0$  (subsector A'OJ') and  $f(\theta)$  is the deeper minimum when  $\bar{\varpi}_1 > 0$  (subsector A'OB').

Consequently constraint (2) will be satisfied in the various sectors of the  $\bar{\varpi}_1 - \bar{\varpi}_2$  plane under the following conditions.

- (a) Sector A'OD':  $f(\theta_2) = 1 - \bar{\varpi}_1 + \bar{\varpi}_2 \geq 0$ , or  $\bar{\varpi}_2 > \bar{\varpi}_1 - 1$ , i.e., above the line AX in figure 1.

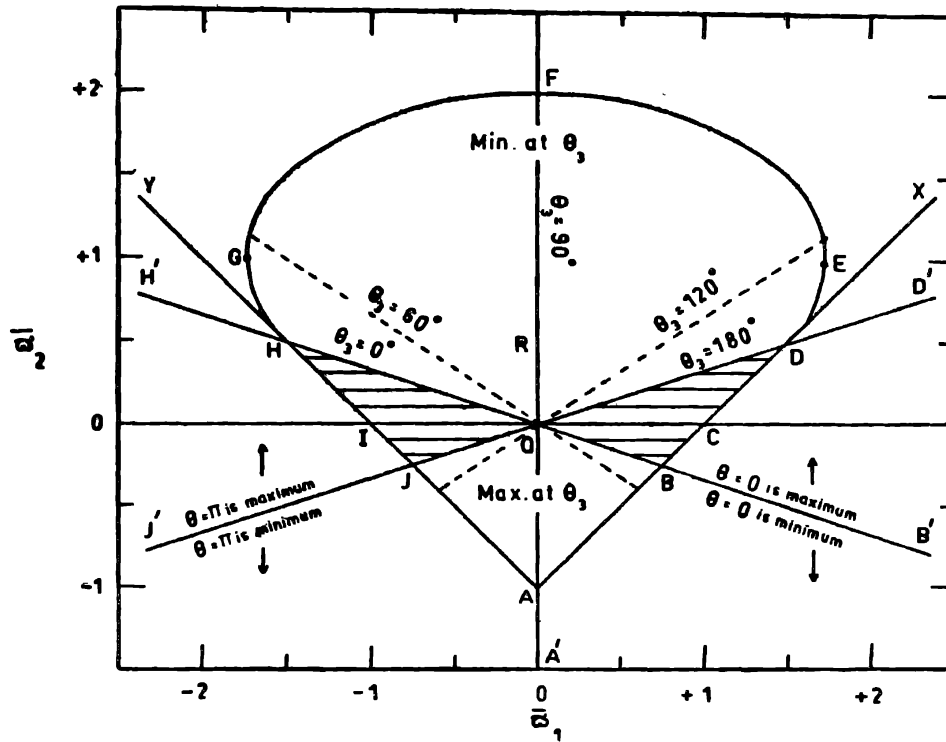


Figure 1. Region of the  $\bar{w}_1 - \bar{w}_2$  plane where  $p(\cos \theta) \geq 0$ .

(b) Sector A'OH' :  $f(\theta_1) = 1 + \bar{w}_1 + \bar{w}_2 \geq 0$ ,

or  $\bar{w}_2 > \bar{w}_1 - 1$ , i.e., above the line AY in figure 1.

(c) Sector D'OH' :  $f(\theta_3) = 1 - \frac{\bar{w}_1^2}{3\bar{w}_2} + \frac{\bar{w}_2}{2} \left( \frac{\bar{w}_1^2}{3\bar{w}_2} - 1 \right) \geq 0$ ,

or, since  $\bar{w}_2 > 0$ ,

$$1 - \sqrt{1 - \frac{\bar{w}_1^2}{3}} < \bar{w}_2 < 1 + \sqrt{1 - \frac{\bar{w}_1^2}{3}}. \quad \dots(3)$$

The upper limit of equation (3) gives the boundary EFG in figure 1, and the lower limit gives the bounding sections DE and GH. Thus we see that the physically significant combinations of  $\bar{w}_1$  and  $\bar{w}_2$  must lie within the top-shaped figure ADEFGHA, in which we can identify the following particular cases :

(i) The origin O represents isotropic scattering and the  $I_r$  component of Rayleigh phase matrix; (ii)  $R(\bar{w}_1 = 0, \bar{w}_2 = \frac{1}{2})$  represents Rayleigh phase function; (iii)  $F(\bar{w}_1 = 0, \bar{w}_2 = 2)$  represents the  $I_1$  component of Rayleigh matrix; (iv) The line CI bounded by  $\bar{w}_1 = \pm 1$  represents the anisotropic scattering phase function; and (v) Points E,  $(G(\bar{w}_1 = \pm 3, \bar{w}_2 = 1))$  and  $A(\bar{w}_1 = 0, \bar{w}_2 = -1)$  are other extreme phase functions which are physically significant.

Now, in order to obtain a variety of shapes of the phase functions, we have considered 37 combinations of  $\bar{w}_1$  and  $\bar{w}_2$  (given in table 1) which cover the top-shaped region of figure 1. Representative scattering diagrams for some of these pairs have been given by Bhatia & Abhyankar (1983). These indicate that (i) a negative value of  $\bar{w}_1$  leads to a predominance of backward over forward scattering, the reverse

being true for positive  $\bar{\omega}_1$ ; and (ii) a negative value of  $\omega_2$  leads to a predominance of transverse over forward or backward scattering, the reverse being true for positive  $\bar{\omega}_2$ .

### 3. Computations of H-functions

We need to compute the three *H*-functions defined by

$$H^{(n)} = 1 + \mu H^{(n)}(\mu) \int_0^1 \frac{\Psi^{(n)}(\mu') H^{(n)}(\mu') d\mu'}{\mu + \mu'} \quad (n = 0, 1, 2),$$

where the  $\Psi^{(n)}(\mu)$  have been defined in Paper I.

All combinations of  $\bar{\omega}_1$  and  $\bar{\omega}_2$  given in table 1 along with  $\omega_0 = 0.1, 0.2, 0.4, 0.6, 0.7, 0.8, 0.9, 0.93, 0.95, 0.96, 0.97, 0.98, 0.99, 0.995$  and  $0.997$  were used. The required constraint on  $\Psi(\mu)$  that  $\int_0^1 \Psi(\mu') d\mu' \leq 1/2$  is satisfied in all the cases considered. We also need to compute the auxiliary functions  $\chi, \psi, \varphi, \sigma$  and  $\theta$  defined in Paper I.

The following alternative form for the integral equation was used :

$$H^{-1}(\mu) = \left[ 1 - 2 \int_0^1 \Psi(\mu') d\mu' \right] + \int_0^1 \frac{\mu' \Psi(\mu') H(\mu') d\mu'}{\mu + \mu'}.$$

A 32-point Gaussian quadrature was used to evaluate the integral. All the calculations were done in double precision arithmetic.

Initially all the values of  $H(\mu)$  were set equal to 1. Successive iterations were performed and the integration stopped when the difference between successive iterated values became less than  $1 \times 10^{-10}$ . The moments were calculated and computations were also checked with the help of the moment relation

$$\int_0^1 H^{(n)}(\mu') \Psi(\mu') d\mu' = 1 - [1 - 2 \int_0^1 \Psi(\mu') d\mu']^{1/2} \quad (n = 0, 1, 2). \quad \dots(4)$$

Further, it was verified that the following relation given by Paper I is satisfied :

$$\frac{3\omega_0 rs}{2\xi} - \frac{\bar{\omega}_1 pq}{2} + \frac{3\bar{\omega}_2 tv}{8} = D. \quad \dots(5)$$

### 4. Accuracy of the generated functions

All the *H*-functions were evaluated using weights and divisions accurate up to 15 decimal places and the computations were performed in double precision arithmetic. Since the computer used had large round-off errors (because of the floating point processor used), the iteration accuracy of  $1 \times 10^{-10}$  is not fully representative of the final accuracy of the functions; we estimate that the computer worked with an accuracy of slightly better than 12 significant figures. Test calculations for the case  $\omega_0 = 1.0$  showed that the *H*-functions computed by us agree with those tabulated by Horak & Jahousek (1965) to six significant figures and their claim of

Table 2. *H*- and auxiliary functions for various values of  $\theta_0$ ,  $\theta_1$ ,  $\theta_2$ , and  $\mu$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+01	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1006360D+01	.9992092D+00	.9979063D+00	.4776110D-01	-.1078542D+01	.3831603D-02	.4996046D-01	.1000095D+01
.10	.1010154D+01	.9985615D+00	.9968672D+00	.9592413D-01	-.1088968D+01	.1248412D-01	.9985615D-01	.1000333D+01
.15	.1013042D+01	.9980150D+00	.9961447D+00	.1443605D+00	-.1103266D+01	.2598832D-01	.1497023D+00	.1000670D+01
.20	.1015382D+01	.9975451D+00	.9955961D+00	.1930092D+00	-.1121843D+01	.4436477D-01	.1995090D+00	.1001084D+01
.25	.1017341D+01	.9971353D+00	.9951591D+00	.2418325D+00	-.1144896D+01	.6762830D-01	.2492838D+00	.1001557D+01
.30	.1019019D+01	.9967741D+00	.9947998D+00	.2908042D+00	-.1172542D+01	.9579008D-01	.2990322D+00	.1002078D+01
.35	.1020479D+01	.9964527D+00	.9944978D+00	.3399054D+00	-.1204859D+01	.1288587D+00	.3487584D+00	.1002638D+01
.40	.1021765D+01	.9961647D+00	.9942396D+00	.3891219D+00	-.1241901D+01	.1668411D+00	.3984659D+00	.1003232D+01
.45	.1022909D+01	.9959048D+00	.9940156D+00	.4384426D+00	-.1283709D+01	.2097427D+00	.4481572D+00	.1003854D+01
.50	.1023934D+01	.9956690D+00	.9938193D+00	.4878586D+00	-.1330313D+01	.2575680D+00	.4978345D+00	.1004499D+01
.55	.1024860D+01	.9954541D+00	.9936455D+00	.5373629D+00	-.1381737D+01	.3103208D+00	.5474997D+00	.1005165D+01
.60	.1025700D+01	.9952571D+00	.9934904D+00	.5869497D+00	-.1438001D+01	.3680041D+00	.5971543D+00	.1005849D+01
.65	.1026468D+01	.9950760D+00	.9933511D+00	.6366141D+00	-.1499119D+01	.4306207D+00	.6467994D+00	.1006548D+01
.70	.1027172D+01	.9949089D+00	.9932252D+00	.6863522D+00	-.1565104D+01	.4981726D+00	.6964362D+00	.1007261D+01
.75	.1027820D+01	.9947541D+00	.9931108D+00	.7361604D+00	-.1635967D+01	.5706619D+00	.7460656D+00	.1007987D+01
.80	.1028419D+01	.9946104D+00	.9930063D+00	.7860359D+00	-.1711717D+01	.6480902D+00	.7956883D+00	.1008723D+01
.85	.1028974D+01	.9944764D+00	.9929105D+00	.8359763D+00	-.1792362D+01	.7304589D+00	.8453050D+00	.1009469D+01
.90	.1029491D+01	.9943514D+00	.9928224D+00	.8859793D+00	-.1877907D+01	.8177693D+00	.8949163D+00	.1010224D+01
.95	.1029973D+01	.9942343D+00	.9927409D+00	.9360431D+00	-.1968358D+01	.9100224D+00	.9445226D+00	.1010987D+01
1.00	.1030424D+01	.9941245D+00	.9926654D+00	.9861661D+00	-.2063720D+01	.1007219D+01	.9941245D+00	.1011757D+01

MOMENTS				CHECKS		
$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Check 0	
$H_0$	.1021764D+01	.5129085D+00	.3424501D+00	.2570331D+00	.2076061D-07	-.1721740D-02
$H_1$	.9960781D+00	.4976021D+00	.3316185D+00	.2486684D+00	.1989126D+00	-.6766736D-09
$H_2$	.9943692D+00	.4967549D+00	.3310705D+00	.2482665D+00	.1985961D+00	-.8890991D-08

H- and auxiliary functions

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+00	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1013114D+01	.9984263D+00	.9958352D+00	.4536453D-01	-.1085034D+01	.5259791D-02	.4992132D-01	.1000190D+01
.10	.1021088D+01	.9971396D+00	.9937766D+00	.9152105D-01	-.1098980D+01	.1517065D-01	.9971396D-01	.1000662D+01
.15	.1027227D+01	.9960552D+00	.9923481D+00	.1382244D+00	-.1115627D+01	.2978638D-01	.1494083D+00	.1001333D+01
.20	.1032242D+01	.9951236D+00	.9912649D+00	.1853565D+00	-.1135786D+01	.4914544D-01	.1990247D+00	.1002154D+01
.25	.1036473D+01	.9943121D+00	.9904030D+00	.2328429D+00	-.1159858D+01	.7327634D-01	.2485780D+00	.1003093D+01
.30	.1040118D+01	.9935972D+00	.9896952D+00	.2806319D+00	-.1188079D+01	.1022010D+00	.2980791D+00	.1004126D+01
.35	.1043305D+01	.9929617D+00	.9891006D+00	.3286854D+00	-.1220611D+01	.1359366D+00	.3475366D+00	.1005238D+01
.40	.1046124D+01	.9923924D+00	.9885923D+00	.3769746D+00	-.1257565D+01	.1744971D+00	.3969570D+00	.1006414D+01
.45	.1048641D+01	.9918792D+00	.9881519D+00	.4254767D+00	-.1299025D+01	.2178935D+00	.4463456D+00	.1007646D+01
.50	.1050906D+01	.9914137D+00	.9877658D+00	.4741738D+00	-.1345056D+01	.2661353D+00	.4957069D+00	.1008924D+01
.55	.1052958D+01	.9909895D+00	.9874243D+00	.5230512D+00	-.1395708D+01	.3192300D+00	.5450442D+00	.1010243D+01
.60	.1054827D+01	.9906011D+00	.9871197D+00	.5720966D+00	-.1451022D+01	.3771843D+00	.5943606D+00	.1011596D+01
.65	.1056538D+01	.9902440D+00	.9868461D+00	.6213001D+00	-.1511030D+01	.4400037D+00	.6436586D+00	.1012981D+01
.70	.1058111D+01	.9899146D+00	.9865989D+00	.6706532D+00	-.1575760D+01	.5076928D+00	.6929402D+00	.1014392D+01
.75	.1059562D+01	.9896096D+00	.9863744D+00	.7201487D+00	-.1645235D+01	.5802558D+00	.7422072D+00	.1015827D+01
.80	.1060906D+01	.9893264D+00	.9861694D+00	.7697803D+00	-.1719473D+01	.6576961D+00	.7914611D+00	.1017284D+01
.85	.1062155D+01	.9890627D+00	.9859814D+00	.8195429D+00	-.1798492D+01	.7400168D+00	.8407033D+00	.1018760D+01
.90	.1063319D+01	.9888165D+00	.9858085D+00	.8694319D+00	-.1882304D+01	.8272206D+00	.8899349D+00	.1020252D+01
.95	.1064407D+01	.9885861D+00	.9856487D+00	.9194431D+00	-.1970922D+01	.9193099D+00	.9391568D+00	.1021761D+01
1.00	.1065425D+01	.9883701D+00	.9855007D+00	.9695732D+00	-.2064357D+01	.1016287D+01	.9883701D+00	.1023283D+01

	MOMENTS				CHECKS	
	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check, 0
$H_0$	.5275807D+00	.3528487D+00	.2650709D+00	.2122660D+00	.4215125D-07	-.6318305D-02
$H_1$	.4952495D+00	.3299368D+00	.2473628D+00	.1978467D+00	-.1345323D-08	
$H_2$	.4935798D+00	.3288577D+00	.2465717D+00	.1972239D+00	-.1768384D-07	

Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1028098D+01	.9968839D+00	.9917587D+00	.3995705D-01	-.1100390D+01	.8497909D-02	.4984419D-01	.1000376D+01
.10	.1045921D+01	.9943436D+00	.9877173D+00	.8142973D-01	-.1123697D+01	.2134891D-01	.9943436D-01	.1001311D+01
.15	.105990D+01	.9922079D+00	.9849241D+00	.1239856D+00	-.1147237D+01	.3862370D-01	.1488312D+00	.1002636D+01
.20	.1071710D+01	.9903771D+00	.9828120D+00	.1674090D+00	-.1172624D+01	.6038475D-01	.1980754D+00	.1004256D+01
.25	.1081757D+01	.9887849D+00	.9811349D+00	.2115999D+00	-.1200661D+01	.8668235D-01	.2471962D+00	.1006105D+01
.30	.1090531D+01	.9873846D+00	.9797600D+00	.2563383D+00	-.1231838D+01	.1175571D+00	.2962154D+00	.1008139D+01
.35	.1098295D+01	.9861415D+00	.9786065D+00	.3016693D+00	-.1266487D+01	.1530423D+00	.3451495D+00	.1010325D+01
.40	.1105235D+01	.9850293D+00	.9776218D+00	.3474943D+00	-.1304847D+01	.1931653D+00	.3940117D+00	.1012636D+01
.45	.1111491D+01	.9840276D+00	.9767693D+00	.3937668D+00	-.1347101D+01	.2379490D+00	.4428124D+00	.1015054D+01
.50	.1117168D+01	.9831202D+00	.9760227D+00	.4404490D+00	-.1393388D+01	.2874128D+00	.4915601D+00	.1017562D+01
.55	.1122350D+01	.9822938D+00	.9753628D+00	.4875098D+00	-.1443821D+01	.3415730D+00	.5402616D+00	.1020148D+01
.60	.1127102D+01	.9815378D+00	.9747746D+00	.5349230D+00	-.1498491D+01	.4004437D+00	.5889227D+00	.1022801D+01
.65	.1131480D+01	.9808433D+00	.9742467D+00	.5826668D+00	-.1557473D+01	.4640370D+00	.6375482D+00	.1025514D+01
.70	.1135529D+01	.9802031D+00	.9737699D+00	.6307225D+00	-.1620831D+01	.5323633D+00	.6861421D+00	.1028279D+01
.75	.1139285D+01	.9796107D+00	.9733370D+00	.6790739D+00	-.1688616D+01	.6054319D+00	.7347080D+00	.1031089D+01
.80	.1142782D+01	.9790610D+00	.9729420D+00	.7277073D+00	-.1760874D+01	.6832505D+00	.7832488D+00	.1033940D+01
.85	.1146046D+01	.9785493D+00	.9725800D+00	.7766106D+00	-.1837645D+01	.7658264D+00	.8317669D+00	.1036828D+01
.90	.1149100D+01	.9780719D+00	.9722469D+00	.8257733D+00	-.1918961D+01	.8531657D+00	.8802647D+00	.1039749D+01
.95	.1151966D+01	.9776254D+00	.9719394D+00	.8751862D+00	-.2004851D+01	.9452739D+00	.9287441D+00	.1042699D+01
1.00	.1154660D+01	.9772067D+00	.9716546D+00	.9248410D+00	-.2095342D+01	.1042156D+01	.9772067D+00	.1045676D+01

CHECKS

MOMENTS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	check 0
$H_0$	.1106827D+01	.5641970D+00	.3789568D+00	.2853213D+00	.2287936D+00	.8760777D-07	-.2056603D-01
$H_1$	.9847226D+00	.4906735D+00	.3266683D+00	.2448264D+00	.1957764D+00	-.2659500D-08	
$H_2$	.9781473D+00	.4874291D+00	.3245742D+00	.2432924D+00	.1945694D+00	-.3498683D-07	

*H- and auxiliary functions*

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1045875D+01	.9953710D+00	.9876664D+00	.3332058D-01	-.1120364D+01	.1251499D-01	.4976855D-01	.1000560D+01
.10	.1076465D+01	.9916086D+00	.9818135D+00	.6874055D-01	-.1157740D+01	.2918408D-01	.9916086D-01	.1001947D+01
.15	.1101361D+01	.9884529D+00	.9777151D+00	.1057260D+00	-.1192787D+01	.5004027D-01	.1482679D+00	.1003911D+01
.20	.1122609D+01	.9857532D+00	.9746244D+00	.1440009D+00	-.1227858D+01	.7514492D-01	.1971506D+00	.1006308D+01
.25	.1141195D+01	.9834095D+00	.9721753D+00	.1833795D+00	-.1264135D+01	.1045558D+00	.2458524D+00	.1009041D+01
.30	.1157713D+01	.9813512D+00	.9701707D+00	.2237250D+00	-.1302351D+01	.1383238D+00	.2944054D+00	.1012045D+01
.35	.1172556D+01	.9795265D+00	.9684913D+00	.2649316D+00	-.1343013D+01	.1764930D+00	.3428343D+00	.1015269D+01
.40	.1186009D+01	.9778959D+00	.9670592D+00	.3069148D+00	-.1386494D+01	.2191015D+00	.3911583D+00	.1018677D+01
.45	.1198286D+01	.9764288D+00	.9658205D+00	.3496057D+00	-.1433082D+01	.2661823D+00	.4393929D+00	.1022239D+01
.50	.1209552D+01	.9751009D+00	.9647368D+00	.3929468D+00	-.1483004D+01	.3177642D+00	.4875505D+00	.1025932D+01
.55	.1219940D+01	.9738928D+00	.9637795D+00	.4368900D+00	-.1536444D+01	.3738723D+00	.5356410D+00	.1029737D+01
.60	.1229558D+01	.9727884D+00	.9629268D+00	.4813943D+00	-.1593555D+01	.4345283D+00	.5836731D+00	.1033641D+01
.65	.1238496D+01	.9717747D+00	.9621619D+00	.5264244D+00	-.1654466D+01	.4997517D+00	.6316536D+00	.1037629D+01
.70	.1246827D+01	.9708406D+00	.9614715D+00	.5719500D+00	-.1719284D+01	.5695595D+00	.6795885D+00	.1041693D+01
.75	.1254615D+01	.9699770D+00	.9608449D+00	.6179444D+00	-.1788103D+01	.6439667D+00	.7274828D+00	.1045822D+01
.80	.1261915D+01	.9691760D+00	.9602734D+00	.6643846D+00	-.1861002D+01	.7229868D+00	.7753408D+00	.1050611D+01
.85	.1268773D+01	.9684309D+00	.9597499D+00	.7112500D+00	-.1938052D+01	.8066319D+00	.8231663D+00	.1054252D+01
.90	.1275231D+01	.9677360D+00	.9592685D+00	.7585226D+00	-.2019313D+01	.8949125D+00	.8709624D+00	.1058540D+01
.95	.1281323D+01	.9670863D+00	.9588241D+00	.8061863D+00	-.2104839D+01	.9878385D+00	.9187320D+00	.1062871D+01
1.00	.1287081D+01	.9664775D+00	.9584126D+00	.8542267D+00	-.2194679D+01	.1085418D+01	.9664775D+00	.1067240D+01

CHECKS

MOMENTS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1191852D+01	.6166697D+00	.4167310D+00	.3147838D+00	.2529264D+00	.1389342D-06	-.3477152D-01
$H_1$	.9774733D+00	.4862605D+00	.3235191D+00	.2423840D+00	.1937834D+00	-.3944328D-08	
$H_2$	.9678536D+00	.4815285D+00	.3204690D+00	.2401512D+00	.1920274D+00	-.5193102D-07	



Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1056396D+01	.9946252D+00	.9858006D+00	.2923923D-01	-.1133175D+01	.1501727D-01	.4973126D-01	.1000650D+01
.10	.1095139D+01	.9902629D+00	.9789174D+00	.6076729D-01	-.1180578D+01	.3416000D-01	.9902629D-01	.1002260D+01
.15	.1127263D+01	.9866085D+00	.9741874D+00	.9404721D-01	-.1224418D+01	.5741201D-01	.1479913D+00	.1004538D+01
.20	.1155094D+01	.9834852D+00	.9706252D+00	.1287962D+00	-.1267356D+01	.8481828D-01	.1966970D+00	.1007316D+01
.25	.1179754D+01	.9807760D+00	.9678053D+00	.1648205D+00	-.1310734D+01	.1164303D+00	.2451940D+00	.1010482D+01
.30	.1201915D+01	.9783985D+00	.9654990D+00	.2019744D+00	-.1355388D+01	.1522971D+00	.2935195D+00	.1013960D+01
.35	.1222030D+01	.9762921D+00	.9635682D+00	.2401432D+00	-.1401901D+01	.1924637D+00	.3417022D+00	.1017691D+01
.40	.1240426D+01	.9744110D+00	.9619225D+00	.2792338D+00	-.1450707D+01	.2369702D+00	.3897644D+00	.1021633D+01
.45	.1257351D+01	.9727193D+00	.9604998D+00	.3191689D+00	-.1502144D+01	.2858523D+00	.4377237D+00	.1025751D+01
.50	.1272999D+01	.9711889D+00	.9592556D+00	.3598835D+00	-.1556481D+01	.3391420D+00	.4855944D+00	.1030021D+01
.55	.1287528D+01	.9697970D+00	.9581569D+00	.4013220D+00	-.1613941D+01	.3968674D+00	.5333884D+00	.1034419D+01
.60	.1301066D+01	.9685252D+00	.9571786D+00	.4434365D+00	-.1674710D+01	.4590539D+00	.5811151D+00	.1038930D+01
.65	.1313720D+01	.9673582D+00	.9563013D+00	.4861856D+00	-.1738944D+01	.5257239D+00	.6287829D+00	.1043538D+01
.70	.1325581D+01	.9662833D+00	.9555096D+00	.5295330D+00	-.1806779D+01	.5968977D+00	.6763983D+00	.1048232D+01
.75	.1336727D+01	.9652897D+00	.9547912D+00	.5734467D+00	-.1878329D+01	.6725934D+00	.7239673D+00	.1053001D+01
.80	.1347224D+01	.9643684D+00	.9541362D+00	.6178985D+00	-.1953698D+01	.7528272D+00	.7714947D+00	.1057838D+01
.85	.1357132D+01	.9635116D+00	.9535363D-00	.6628633D+00	-.2032973D+01	.8376138D+00	.8189849D+00	.1062735D+01
.90	.1366500D+01	.9627128D+00	.9529846D+00	.7083187D+00	-.2116233D+01	.9269665D+00	.8664415D+00	.1067686D+01
.95	.1375374D+01	.9619660D+00	.9524755D+00	.7542446D+00	-.2203549D+01	.1020897D+01	.9138677D+00	.1072685D+01
1.00	.1383793D+01	.9612664D+00	.9520042D+00	.8006231D+00	-.2294981D+01	.1119417D+01	.9612664D+00	.1077728D+01

CHECKS

	Mom. check	Check 0
$H_0$	.1685211D-06	-.3862713D-01
$H_1$	-.4576252D-08	
$H_2$	-.6027491D-07	

MOMENTS

	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$
$H_0$	.6537361D+00	.4436509D+00	.3358901D+00	.2702739D+00
$H_1$	.4841118D+00	.3210868D+00	.2411960D+00	.1938144D+00
$H_2$	.4786665D+00	.3184792D+00	.2386293D+00	.1907961D+00

H- and auxiliary functions

$\varpi_1 = .800, \varpi_2 = .000, \varpi_3 = -.760$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1068721D+01	.9938863D+01	.9838543D+00	.2426617D-01	-.1149277D+01	.1810768D-01	.4969431D-01	.1000740D+01
.10	.1117627D+01	.9889314D+00	.9760572D+00	.5087670D-01	-.1210314D+01	.4040408D-01	.9889314D-01	.1002571D+01
.15	.1159100D+01	.9847854D+00	.9707092D+00	.7933908D-01	-.1266716D+01	.6679325D-01	.1477178D+00	.1005159D+01
.20	.1195701D+01	.9812454D+00	.9666868D+00	.1093900D+00	-.1321383D+01	.9728647D-01	.1962491D+00	.1008313D+01
.25	.1228652D+01	.9781773D+00	.9635056D+00	.1408452D+00	-.1375765D+01	.1319168D+00	.2445443D+00	.1011906D+01
.30	.1258687D+01	.9754868D+00	.9609060D+00	.1735630D+00	-.1430767D+01	.1707228D+00	.2926460D+00	.1015850D+01
.35	.1286298D+01	.9731047D+00	.9587309D+00	.2074296D+00	-.1487023D+01	.2137433D+00	.3405866D+00	.1020080D+01
.40	.1311845D+01	.9709785D+00	.9568780D+00	.2423504D+00	-.1545011D+01	.2610152D+00	.3883914D+00	.1024547D+01
.45	.1335601D+01	.9690674D+00	.9552771D+00	.2782456D+00	-.1605106D+01	.3125730D+00	.4360803D+00	.1029213D+01
.50	.1357783D+01	.9673392D+00	.9538775D+00	.3150465D+00	-.1667612D+01	.3684486D+00	.4836696D+00	.1034049D+01
.55	.1378566D+01	.9657682D+00	.9526419D+00	.3526935D+00	-.1732782D+01	.4286712D+00	.5311725D+00	.1039029D+01
.60	.1398097D+01	.9643333D+00	.9515422D+00	.3911346D+00	-.1800831D+01	.4932673D+00	.5786000D+00	.1044136D+01
.65	.1416500D+01	.9630170D+00	.9505562D+00	.4303237D+00	-.1871943D+01	.5622614D+00	.6259611D+00	.1049352D+01
.70	.1433878D+01	.9618050D+00	.9496667D+00	.4702201D+00	-.1946277D+01	.6356757D+00	.6732635D+00	.1054664D+01
.75	.1450323D+01	.9606850D+00	.9488597D+00	.5107873D+00	-.2023973D+01	.7135304D+00	.7205137D+00	.1060061D+01
.80	.1465914D+01	.9596467D+00	.9481241D+00	.5519928D+00	-.2105154D+01	.7958442D+00	.7677174D+00	.1065533D+01
.85	.1480722D+01	.9586815D+00	.9474504D+00	.5938072D+00	-.2189929D+01	.8826340D+00	.8148793D+00	.1071072D+01
.90	.1494806D+01	.9577817D+00	.9468311D+00	.6362041D+00	-.2278396D+01	.9739155D+00	.8620035D+00	.1076672D+01
.95	.1508223D+01	.9569407D+00	.9462596D+00	.6791594D+00	-.2370642D+01	.1069703D+01	.9090937D+00	.1082326D+01
1.00	.1521021D+01	.9561530D+00	.9457306D+00	.7226514D+00	-.2466746D+01	.1170009D+01	.9561530D+00	.1088029D+01

MOMENTS

CHECKS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	check 0
$H_0$	.1330733D+01	.7046940D+00	.4809586D+00	.3652829D+00	.2945099D+00	.2029393D-06	-.3771940D-01
$H_1$	.9704619D+00	.4820000D+00	.3204815D+00	.2400293D+00	.1918628D+00	-.5201441D-08	
$H_2$	.9579439D+00	.4758606D+00	.3165294D+00	.2371383D+00	.1895900D+00	-.6853649D-07	

Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$x$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+01	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1084377D+01	.9931540D+00	.9819272D+00	.1755078D-01	-.1171875D+01	.2236946D-01	.4965770D-01	.1000830D+01
.10	.1147240D+01	.9876136D+00	.9732321D+00	.3721858D-01	-.1253843D+01	.4918521D-01	.9876136D-01	.1002879D+01
.15	.1202174D+01	.9829830D+00	.9672790D+00	.5863022D-01	-.1330654D+01	.8022270D-01	.1474475D+00	.1005774D+01
.20	.1251888D+01	.9790330D+00	.9628073D+00	.8158564D-01	-.1405299D+01	.1154304D+00	.1958066D+00	.1009298D+01
.25	.1297648D+01	.9756125D+00	.9592742D+00	.1059420D+00	-.1479232D+01	.1548011D+00	.2439031D+00	.1013312D+01
.30	.1340200D+01	.9726151D+00	.9563892D+00	.1315871D+00	-.1553347D+01	.1983457D+00	.2917845D+00	.1017715D+01
.35	.1380041D+01	.9699629D+00	.9539768D+00	.1584279D+00	-.1628267D+01	.2460827D+00	.3394870D+00	.1022436D+01
.40	.1417532D+01	.9675969D+00	.9519230D+00	.1863852D+00	-.1704462D+01	.2980345D+00	.3870387D+00	.1027420D+01
.45	.1452948D+01	.9654713D+00	.9501491D+00	.2153902D+00	-.1782302D+01	.3542246D+00	.4344621D+00	.1032625D+01
.50	.1486507D+01	.9635502D+00	.9485990D+00	.2453823D+00	-.1862094D+01	.4146766D+00	.4817751D+00	.1038017D+01
.55	.1518388D+01	.9618044D+00	.9472310D+00	.2763074D+00	-.19444095D+01	.4794138D+00	.5289924D+00	.1043569D+01
.60	.1548741D+01	.9602104D+00	.9460138D+00	.3081172D+00	-.2028525D+01	.5484585D+00	.5761262D+00	.1049261D+01
.65	.1577694D+01	.9587487D+00	.9449228D+00	.3407680D+00	-.2115578D+01	.6218320D+00	.6231867D+00	.1055073D+01
.70	.1605356D+01	.9574032D+00	.9439387D+00	.3742199D+00	-.2205423D+01	.6995545D+00	.6701822D+00	.1060992D+01
.75	.1631825D+01	.9561602D+00	.9430462D+00	.4084368D+00	-.2298212D+01	.7816452D+00	.7171202D+00	.1067004D+01
.80	.1657185D+01	.9550083D+00	.9422327D+00	.4433858D+00	-.2394080D+01	.8681220D+00	.7640067D+00	.1073099D+01
.85	.1681512D+01	.9539376D+00	.9414879D+00	.4790363D+00	-.2493151D+01	.9590020D+00	.8108470D+00	.1079268D+01
.90	.1704874D+01	.9529397D+00	.9408033D+00	.5153606D+00	-.2595534D+01	.1054301D+01	.8576458D+00	.1085504D+01
.95	.1727333D+01	.9520074D+00	.9401717D+00	.5523327D+00	-.2701332D+01	.1154034D+01	.9044070D+00	.1091799D+01
1.00	.1748944D+01	.9511342D+00	.9395871D+00	.5899291D+00	-.2810636D+01	.1258215D+01	.9511342D+00	.1098149D+01

CHECKS

MOMENT

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1454794D+01	.7855349D+00	.5408092D+00	.4127608D+00	.338397D+00	.2471957D-06	-.2846095D-01
$H_1$	.9670409D+00	.4799239D+00	.3190023D+00	.2388831D+00	.1909281D+00	-.5820081D-08	
$H_2$	.9531251D+00	.4731090D+00	.3146182D+00	.2356772D+00	.1884082D+00	-.7671797D-07	

H- and auxiliary functions

$\alpha_0 = .930, \alpha_1 = .000, \alpha_2 = -.583$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1090375D+01	.9929357D+00	.9813527D+00	.1482305D-01	-.1181352D+01	.2413501D-01	.4964678D-01	.1000856D+01
.10	.1158929D+01	.9872209D+00	.9723912D+00	.3157382D-01	-.1272686D+01	.5287718D-01	.9872209D-01	.1002971D+01
.15	.1219562D+01	.9824463D+00	.9662592D+00	.4993926D-01	-.1359004D+01	.8594726D-01	.1473669D+00	.1005957D+01
.20	.1274999D+01	.9783746D+00	.9616547D+00	.6975280D-01	-.1443271D+01	.1232650D+00	.1956749D+00	.1009592D+01
.25	.1326497D+01	.9748495D+00	.9580178D+00	.9089525D-01	-.1526992D+01	.1648038D+00	.2437124D+00	.1013731D+01
.30	.1374788D+01	.9717612D+00	.9550486D+00	.1132722D+00	-.1610756D+01	.2105597D+00	.2915284D+00	.1018271D+01
.35	.1420358D+01	.9690290D+00	.9525664D+00	.1368049D+00	-.1695423D+01	.2605400D+00	.3391602D+00	.1023138D+01
.40	.1463553D+01	.9665921D+00	.9504534D+00	.1614256D+00	-.1781349D+01	.3147577D+00	.3866368D+00	.1028275D+01
.45	.1504639D+01	.9644032D+00	.9486287D+00	.1870746D+00	-.1868882D+01	.3732290D+00	.4339814D+00	.1033639D+01
.50	.1543824D+01	.9624250D+00	.9470344D+00	.2136990D+00	-.1958311D+01	.4359714D+00	.4812125D+00	.1039196D+01
.55	.1581281D+01	.9606276D+00	.9456276D+00	.2412510D+00	-.2049880D+01	.5030032D+00	.5283452D+00	.1044918D+01
.60	.1617157D+01	.9589867D+00	.9443758D+00	.2696873D+00	-.2143796D+01	.5743424D+00	.5753920D+00	.1050783D+01
.65	.1651560D+01	.9574821D+00	.9432539D+00	.2989685D+00	-.2240245D+01	.6500071D+00	.6223634D+00	.1056772D+01
.70	.1684611D+01	.9560972D+00	.9422422D+00	.3290385D+00	-.2339389D+01	.7300146D+00	.6692681D+00	.1062870D+01
.75	.1716397D+01	.9548180D+00	.9413246D+00	.3599238D+00	-.2441374D+01	.8143816D+00	.7161135D+00	.1069064D+01
.80	.1747002D+01	.9536326D+00	.9404883D+00	.3915338D+00	-.2546331D+01	.9031242D+00	.7629061D+00	.1075344D+01
.85	.1776500D+01	.9525309D+00	.9397226D+00	.4238600D+00	-.2654381D+01	.9962578D+00	.8096513D+00	.1081700D+01
.90	.1804956D+01	.9515041D+00	.9390189D+00	.4568760D+00	-.2765632D+01	.1093797D+01	.8563537D+00	.1088124D+01
.95	.1832431D+01	.9505448D+00	.9383696D+00	.4905573D+00	-.2880185D+01	.1195756D+01	.9030176D+00	.1094609D+01
1.00	.1858980D+01	.9496465D+00	.9377687D+00	.5248809D+00	-.2998133D+01	.1302147D+01	.9496465D+00	.1101150D+01

CHECKS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1511350D+01	.8230322D+00	.5688318D+00	.4351209D+00	.3524365D+00	.2646138D-06	-.2301585D-01
$H_1$	.9660252D+00	.4793079D+00	.3185635D+00	.2385432D+00	.1906509D+00	-.6004423D-08	
$H_2$	.9516965D+00	.4722938D+00	.3140521D+00	.2352445D+00	.1880583D+00	-.7915713D-07	

MOMENTS

Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1095043D+01	.9927904D+00	.9809707D+00	.1262489D-01	-.1189127D+01	.2557425D-01	.4963952D-01	.1000874D+01
.10	.1168173D+01	.9869598D+00	.9718324D+00	.2698541D-01	-.1288390D+01	.5593868D-01	.9869598D-01	.1003032D+01
.15	.1233478D+01	.9820895D+00	.9655816D+00	.4281916D-01	-.1382916D+01	.9068042D-01	.1473134D+00	.1036078D+01
.20	.1293681D+01	.9779369D+00	.9608891D+00	.5998811D-01	-.1475631D+01	.1297860D+00	.1955874D+00	.1009787D+01
.25	.1350025D+01	.9743425D+00	.9571834D+00	.7839365D-01	-.1567903D+01	.1731823D+00	.2435856D+00	.1014009D+01
.30	.1403226D+01	.9711938D+00	.9541586D+00	.9795746D-01	-.1660551D+01	.2308528D+00	.2913581D+00	.1018640D+01
.35	.1453753D+01	.9684086D+00	.9516302D+00	.1186138D+00	-.1754134D+01	.2727947D+00	.3389430D+00	.1023603D+01
.40	.1501938D+01	.9659247D+00	.9494780D+00	.1403057D+00	-.1849063D+01	.3290128D+00	.3863699D+00	.1028843D+01
.45	.1548035D+01	.9636938D+00	.9476197D+00	.1629828D+00	-.1945666D+01	.3895161D+00	.4336622D+00	.1034313D+01
.50	.1592240D+01	.9616778D+00	.9459961D+00	.1865998D+00	-.2044207D+01	.4543163D+00	.4808389D+00	.1039979D+01
.55	.1634717D+01	.9598462D+00	.9445635D+00	.2111155D+00	-.2144912D+01	.5234265D+00	.5279154D+00	.1045814D+01
.60	.1675599D+01	.9581742D+00	.9432890D+00	.2364924D+00	-.2247974D+01	.5968606D+00	.5749045D+00	.1051794D+01
.65	.1715002D+01	.9566412D+00	.9421467D+00	.2626960D+00	-.2353563D+01	.6746326D+00	.6218168D+00	.1057900D+01
.70	.1753025D+01	.9552303D+00	.9411166D+00	.2896942D+00	-.2461831D+01	.7567569D+00	.6686612D+00	.1064117D+01
.75	.1789756D+01	.9539271D+00	.9401825D+00	.3174575D+00	-.2572914D+01	.8432472D+00	.7154453D+00	.1070433D+01
.80	.1825273D+01	.9527195D+00	.9393310D+00	.3459583D+00	-.2686935D+01	.9341173D+00	.7621756D+00	.1076835D+01
.85	.1859645D+01	.9515972D+00	.9385516D+00	.3751709D+00	-.2804008D+01	.1029380D+01	.8088576D+00	.1083314D+01
.90	.1892936D+01	.9505513D+00	.9378352D+00	.4050711D+00	-.2924235D+01	.1129049D+01	.8554962D+00	.1089863D+01
.95	.1925203D+01	.9495742D+00	.9371744D+00	.4356364D+00	-.3047711D+01	.1233137D+01	.9020955D+00	.1096475D+01
1.00	.1956498D+01	.9486592D+00	.9365627D+00	.4668457D+00	-.3174527D+01	.1341654D+01	.9486592D+00	.1103142D+01

## CHECKS

## MOMENTS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1559856D+01	.8554994D+00	.5932230D+00	.4546484D+00	.3687148D+00	.2784676D-06	-.1833688D-01
$H_1$	.9653508D+00	.4788990D+00	.3182722D+00	.2383176D+00	.1904670D+00	-.6127001D-08	
$H_2$	.9507484D+00	.4717530D+00	.3136766D+00	.2349575D+00	.1878262D+00	-.8077936D-07	

H- and auxiliary functions

$\varpi_0 = .960, \varpi_1 = .000, \varpi_2 = -.912$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+01	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1097694D+01	.9927178D+00	.9807800D+00	.1134368D-01	-.1193720D+01	.2642037D-01	.4963589D-01	.1000883D+01
.10	.1173481D+01	.9868294D+00	.9715535D+00	.2429509D-01	-.1297766D+01	.5769962D-01	.9868294D-01	.1003062D+01
.15	.1241536D+01	.9819113D+00	.9652435D+00	.3862168D-01	-.1397312D+01	.9349001D-01	.1472867D+00	.1006139D+01
.20	.1304577D+01	.9777185D+00	.9605072D+00	.5420227D-01	-.1495250D+01	.1336746D+00	.1955437D+00	.1009885D+01
.25	.1363837D+01	.9740895D+00	.9567672D+00	.7095054D-01	-.1592920D+01	.1782008D+00	.2435224D+00	.1014148D+01
.30	.1420018D+01	.9709107D+00	.9537147D+00	.8879791D-01	-.1691114D+01	.2270446D+00	.2912732D+00	.1018824D+01
.35	.1473578D+01	.9680991D+00	.9511632D+00	.1076867D+00	-.1790366D+01	.2801971D+00	.3388347D+00	.1023836D+01
.40	.1524842D+01	.9655917D+00	.9489916D+00	.1275668D+00	-.1891069D+01	.3376578D+00	.3862367D+00	.1029126D+01
.45	.1574052D+01	.9633399D+00	.9471166D+00	.1483936D+00	-.1993531D+01	.3994315D+00	.4335029D+00	.1034649D+01
.50	.1621398D+01	.9613051D+00	.9454784D+00	.1701269D+00	-.2098002D+01	.4655261D+00	.4806525D+00	.1040370D+01
.55	.1667037D+01	.9594565D+00	.9440330D+00	.1927300D+00	-.2204695D+01	.5359512D+00	.5277011D+00	.1046261D+01
.60	.1711095D+01	.9577689D+00	.9427471D+00	.2161693D+00	-.2313790D+01	.6107180D+00	.5746614D+00	.1052298D+01
.65	.1753683D+01	.9562218D+00	.9415947D+00	.2404135D+00	-.2425447D+01	.6898379D+00	.6215442D+00	.1058463D+01
.70	.1794896D+01	.9547979D+00	.9405555D+00	.2654339D+00	-.2539809D+01	.7733229D+00	.6683585D+00	.1064740D+01
.75	.1834816D+01	.9534827D+00	.9396131D+00	.2912033D+00	-.2657004D+01	.8611849D+00	.7151121D+00	.1071115D+01
.80	.1873518D+01	.9522641D+00	.9387542D+00	.3176967D+00	-.2777148D+01	.9534359D+00	.7618113D+00	.1077578D+01
.85	.1911068D+01	.9511316D+00	.9379679D+00	.3448903D+00	-.2900348D+01	.1050087D+01	.8084619D+00	.1084120D+01
.90	.1947527D+01	.9500762D+00	.9372452D+00	.3727620D+00	-.3026702D+01	.1151151D+01	.8550686D+00	.1090731D+01
.95	.1982948D+01	.9490902D+00	.9365786D+00	.4012908D+00	-.3156299D+01	.1256638D+01	.9016357D+00	.1097405D+01
1.00	.2017381D+01	.9481669D+00	.9359615D+00	.4304570D+00	-.3289226D+01	.1366559D+01	.9481669D+00	.1104136D+01

CHECKS

MOMENTS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1589419D+01	.8754229D+00	.6082480D+00	.4667067D+00	.3787838D+00	.2864792D-06	-.1559430D-01
$H_1$	.9650144D+00	.4786950D+00	.3181269D+00	.2382050D+00	.1903752D+00	-.6188196D-08	
$H_2$	.9502757D+00	.4714833D+00	.3134894D+00	.2348144D+00	.1877105D+00	-.8158932D-07	

Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1100664D+01	.9926454D+00	.9805894D+00	.9876000D-02	-.1199040D+01	.2739655D-01	.4963227D-01	.1000892D+01
.10	.1179483D+01	.9866992D+00	.9712749D+00	.2119908D-01	-.1308717D+01	.5977358D-01	.9866992D-01	.1003093D+01
.15	.1250710D+01	.9817334D+00	.9649058D+00	.3377076D-01	-.1414232D+01	.9675556D-01	.1472600D+00	.1006200D+01
.20	.1317055D+01	.9775004D+00	.9601258D+00	.4748904D-01	-.1518438D+01	.1382106D+00	.1955001D+00	.1009982D+01
.25	.1379733D+01	.9738368D+00	.9563517D+00	.6228167D-01	-.1622636D+01	.1840752D+00	.2434592D+00	.1014286D+01
.30	.1439435D+01	.9706280D+00	.9532715D+00	.7809136D-01	-.1727584D+01	.2343169D+00	.2911884D+00	.1019008D+01
.35	.1496604D+01	.9677900D+00	.9506971D+00	.9486985D-01	-.1833788D+01	.2889197D+00	.3387265D+00	.1024068D+01
.40	.1551552D+01	.9652592D+00	.9485061D+00	.1125751D+00	-.1941617D+01	.3478772D+00	.3861037D+00	.1029409D+01
.45	.1604511D+01	.9629865D+00	.9466143D+00	.1311695D+00	-.2051355D+01	.4111888D+00	.4333439D+00	.1034985D+01
.50	.1655662D+01	.9609329D+00	.9449616D+00	.1506190D+00	-.2163234D+01	.4788579D+00	.4804665D+00	.1040760D+01
.55	.1705150D+01	.9590673D+00	.9435035D+00	.1708925D+00	-.2277446D+01	.5508902D+00	.5274870D+00	.1046707D+01
.60	.1753097D+01	.9573643D+00	.9422063D+00	.1919612D+00	-.2394158D+01	.6272931D+00	.5744186D+00	.1052801D+01
.65	.1799604D+01	.9558031D+00	.9410438D+00	.2137982D+00	-.2513516D+01	.7080749D+00	.6212720D+00	.1059025D+01
.70	.1844759D+01	.9543663D+00	.9399955D+00	.2363786D+00	-.2635649D+01	.7932447D+00	.680564D+00	.1065361D+01
.75	.1888641D+01	.9530392D+00	.9390448D+00	.2596788D+00	-.2760674D+01	.8828119D+00	.7147794D+00	.1071797D+01
.80	.1931317D+01	.9518095D+00	.9381784D+00	.2836770D+00	-.2888698D+01	.9767861D+00	.7614476D+00	.1078321D+01
.85	.1972849D+01	.9506668D+00	.9373853D+00	.3083521D+00	-.3019818D+01	.1075177D+01	.8080668D+00	.1084923D+01
.90	.2013293D+01	.9496019D+00	.9366564D+00	.3336847D+00	-.3154123D+01	.1177994D+01	.8546417D+00	.1091597D+01
.95	.2052699D+01	.9486071D+00	.9359839D+00	.3596560D+00	-.3291697D+01	.1285246D+01	.9011768D+00	.1098334D+01
1.00	.2091114D+01	.9476756D+00	.9353616D+00	.3862486D+00	-.3432618D+01	.1396943D+01	.9476756D+00	.1105128D+01

MOMENTS		CHECKS	
$H_0$	$\alpha_0$	$\alpha_1$	$\alpha_2$
$H_0$	.1624520D+01	.8992090D+00	.6262417D+00
$H_1$	.9646785D+00	.4784914D+00	.3179819D+00
$H_2$	.9498038D+00	.4712142D+00	.3133026D+00

CHECKS	
Mom. check	Check 0
.2956060D-06	-.1251878D-01
-.6249328D-08	
-.8239852D-07	

*H- and auxiliary functions*

$\varpi_0 = .980, \varpi_1 = 0.00, \varpi_2 = -.931$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+01	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1104130D+01	.9925730D+00	.9803990D+00	.8115793D-02	-.1205509D+01	.2857750D-01	.4962865D-01	.1000900D+01
.10	.1186564D+01	.9865691D+00	.9709966D+00	.1746651D-01	-.1322158D+01	.6229317D-01	.9865691D-01	.1003123D+01
.15	.1261620D+01	.9815557D+00	.9645687D+00	.2789386D-01	-.1435152D+01	.1007395D+00	.1472334D+00	.1006261D+01
.20	.1331995D+01	.9772825D+00	.9597450D+00	.3931823D-01	-.1547288D+01	.1437673D+00	.1954565D+00	.1010079D+01
.25	.1398884D+01	.9735844D+00	.9559368D+00	.5168387D-01	-.1659822D+01	.1913007D+00	.2433961D+00	.1014425D+01
.30	.1462958D+01	.9703457D+00	.9528290D+00	.6494679D-01	-.1773468D+01	.2432973D+00	.2911037D+00	.1019191D+01
.35	.1524645D+01	.9674814D+00	.9502317D+00	.7907004D-01	-.1888697D+01	.2997327D+00	.3386185D+00	.1024300D+01
.40	.1584241D+01	.9649273D+00	.9480213D+00	.9402130D-01	-.2005844D+01	.3605932D+00	.3859709D+00	.1029691D+01
.45	.1641965D+01	.9626337D+00	.9461129D+00	.1097717D+00	-.2125165D+01	.4258721D+00	.4331851D+00	.1035320D+01
.50	.1697983D+01	.9605613D+00	.9444458D+00	.1262948D+00	-.2246865D+01	.4955669D+00	.4802807D+00	.1041150D+01
.55	.1752430D+01	.9586788D+00	.9429749D+00	.1435665D+00	-.2371114D+01	.5696785D+00	.5272733D+00	.1047152D+01
.60	.1805415D+01	.9569604D+00	.9416664D+00	.1615641D+00	-.2498057D+01	.6482095D+00	.5741762D+00	.1053304D+01
.65	.1857032D+01	.9553851D+00	.9404939D+00	.1802666D+00	-.2627819D+01	.7311642D+00	.6210003D+00	.1059586D+01
.70	.1907359D+01	.9539353D+00	.9394365D+00	.1996542D+00	-.2760514D+01	.8185479D+00	.6677547D+00	.1065981D+01
.75	.1956467D+01	.9525964D+00	.9384777D+00	.2197082D+00	-.2896241D+01	.9103666D+00	.7144473D+00	.1072477D+01
.80	.2004414D+01	.9513557D+00	.9376038D+00	.2404107D+00	-.3035092D+01	.1006627D+01	.7610846D+00	.1079062D+01
.85	.2051257D+01	.9502028D+00	.9368039D+00	.2617451D+00	-.3177150D+01	.1107335D+01	.8076724D+00	.1085726D+01
.90	.2097045D+01	.9491285D+00	.9360687D+00	.2836952D+00	-.3322494D+01	.1212498D+01	.8542156D+00	.1092461D+01
.95	.2141822D+01	.9481249D+00	.9353905D+00	.3062460D+00	-.3471196D+01	.1322123D+01	.9007186D+00	.1099261D+01
1.00	.2185629D+01	.9471851D+00	.9347629D+00	.3293827D+00	-.3623322D+01	.1436217D+01	.9471851D+00	.1106188D+01

**CHECKS**

	Mom. check	Check 0
$H_0$	.3064920D-06	-.9031862D-02
$H_1$	-.6310374D-08	
$H_2$	-.8320695D-07	

**MOMENTS**

	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$
$H_0$	.9291715D+00	.6489925D+00	.4995160D+00	.4062446D+00
$H_1$	.4782881D+00	.3178372D+00	.2379806D+00	.1901922D+00
$H_2$	.4709456D+00	.3131161D+00	.2345291D+00	.1874798D+00



Table 2 (Continued)

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.1000000D+01	.1000000D+01	.1000000D+01	.0000000D+00	-.1070175D+01	.0000000D+00	.0000000D+00	.1000000D+01
.05	.1108546D+01	.9925006D+00	.9802088D+00	.5788897D-02	-.1214220D+01	.3015672D-01	.4962503D-01	.1000909D+01
.10	.1195711D+01	.9864391D+00	.9707187D+00	.1250062D-01	-.1340468D+01	.6567963D-01	.9864391D-01	.1003154D+01
.15	.1275861D+01	.9813782D+00	.9642319D+00	.2002778D-01	-.1463905D+01	.1061217D+00	.1472067D+00	.1006321D+01
.20	.1351667D+01	.9770648D+00	.9593648D+00	.2831849D-01	-.1587255D+01	.1513128D+00	.1954130D+00	.1010176D+01
.25	.1424298D+01	.9733324D+00	.9555226D+00	.3733735D-01	-.1711706D+01	.2011620D+00	.2433331D+00	.1014563D+01
.30	.1494403D+01	.9700637D+00	.9523873D+00	.4705686D-01	-.1837920D+01	.2556146D+00	.2910191D+00	.1019375D+01
.35	.1562385D+01	.9671731D+00	.9497672D+00	.5745414D-01	-.1966316D+01	.3146359D+00	.3385106D+00	.1024531D+01
.40	.1628522D+01	.9645957D+00	.9475375D+00	.6850927D-01	-.2097188D+01	.3782034D+00	.3858383D+00	.1329973D+01
.45	.1693011D+01	.9622814D+00	.9456125D+00	.8020443D-01	-.2230752D+01	.4463020D+00	.4330266D+00	.1035655D+01
.50	.1756004D+01	.9601903D+00	.9439309D+00	.9252336D-01	-.2367177D+01	.5189222D+00	.4800952D+00	.1041539D+01
.55	.1817618D+01	.9582909D+00	.9424474D+00	.1054510D+00	-.2506599D+01	.5960581D+00	.5270600D+00	.1047597D+01
.60	.1877950D+01	.9565571D+00	.9411276D+00	.1189733D+00	-.2649133D+01	.6777063D+00	.5739343D+00	.1053806D+01
.65	.1937076D+01	.9549678D+00	.9399450D+00	.1330770D+00	-.2794876D+01	.7638654D+00	.6207291D+00	.1060146D+01
.70	.1995064D+01	.9535051D+00	.9388786D+00	.1477494D+00	-.2943915D+01	.8545355D+00	.6674536D+00	.1066600D+01
.75	.2051971D+01	.9521543D+00	.9379116D+00	.1629788D+00	-.3096324D+01	.9497175D+00	.7141157D+00	.1073156D+01
.80	.2107846D+01	.9509027D+00	.9370304D+00	.1787536D+00	-.3252174D+01	.1049413D+01	.7607222D+00	.1079802D+01
.85	.2162733D+01	.9497397D+00	.9362237D+00	.1950629D+00	-.3411526D+01	.1153626D+01	.8072787D+00	.1086527D+01
.90	.2216673D+01	.9486559D+00	.9354823D+00	.2118963D+00	-.3574438D+01	.1262358D+01	.8537903D+00	.1093324D+01
.95	.2269699D+01	.9476435D+00	.9347983D+00	.2292436D+00	-.3740963D+01	.1375612D+01	.9002613D+00	.1100186D+01
1.00	.2321845D+01	.9466955D+00	.9441654D+00	.2470952D+00	-.3911151D+01	.1493393D+01	.9466955D+00	.1107106D+01

MOMENT			CHECKS				
$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Check 0		
$H_0$	.1729775D+01	.9713620D+00	.6811848D+00	.5255489D+00	.4280989D+00	.3208012D-06	-.4994048D-02
$H_1$	.9640083D+00	.4780851D+00	.3176926D+00	.2378686D+00	.1901009D+00	-.6371380D-08	
$H_2$	.9488625D+00	.4706774D+00	.3129300D+00	.2343868D+00	.1873647D+00	-.8401462D-07	

*H- and auxiliary functions*

$\varpi_0 = .995, \varpi_1 = .000, \varpi_2 = -.945$

$\theta$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\varphi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1111594D+01	.9924645D+00	.9801138D+00	.4119891D-02	-.1220592D+01	.3130289D-01	.4962322D-01	.1000914D+01
.10	.1202111D+01	.9863742D+00	.9705799D+00	.8917331D-02	-.1354003D+01	.6814890D-01	.9863742D-01	.1003169D+01
.15	.1285928D+01	.9812895D+00	.9640637D+00	.1431920D-01	-.1485341D+01	.1100651D+00	.1471934D+00	.1006352D+01
.20	.1365695D+01	.9769561D+00	.9591749D+00	.2029151D-01	-.1617271D+01	.1568580D+00	.1953912D+00	.1010225D+01
.25	.1442563D+01	.9732065D+00	.9553157D+00	.2681179D-01	-.1750939D+01	.2084572D+00	.2433016D+00	.1014633D+01
.30	.1517165D+01	.9699229D+00	.9521667D+00	.3386296D-01	-.1886970D+01	.2647705D+00	.2909769D+00	.1019466D+01
.35	.1589891D+01	.9670192D+00	.9495352D+00	.4143102D-01	-.2025750D+01	.3257667D+00	.3384567D+00	.1024647D+01
.40	.1661004D+01	.9644302D+00	.9472958D+00	.4950397D-01	-.2167544D+01	.3914173D+00	.3857721D+00	.1030114D+01
.45	.1730689D+01	.9621054D+00	.9453626D+00	.5807111D-01	-.2312541D+01	.4617026D+00	.4329474D+00	.1035822D+01
.50	.1799087D+01	.9600050D+00	.9436738D+00	.6712271D-01	-.2460885D+01	.5366080D+00	.4800025D+00	.1041733D+01
.55	.1866304D+01	.9580971D+00	.9421840D+00	.7664980D-01	-.2612690D+01	.6161233D+00	.5269534D+00	.1047820D+01
.60	.1932426D+01	.9563557D+00	.9408586D+00	.8664397D-01	-.2768049D+01	.7002411D+00	.5738134D+00	.1054057D+01
.65	.1997521D+01	.9547594D+00	.9396710D+00	.9709729D-01	-.2927040D+01	.7889561D+00	.6205936D+00	.1060426D+01
.70	.2061647D+01	.9532903D+00	.9386001D+00	.1080022D+00	-.3089729D+01	.8822649D+00	.6673032D+00	.1066910D+01
.75	.2124852D+01	.9519336D+00	.9376290D+00	.1193515D+00	-.3256174D+01	.9801652D+00	.7139502D+00	.1073495D+01
.80	.2187178D+01	.9506765D+00	.9367441D+00	.1311383D+00	-.3426426D+01	.1082655D+01	.7605412D+00	.1080171D+01
.85	.2248661D+01	.9495084D+00	.9359340D+00	.1433559D+00	-.3600532D+01	.1189735D+01	.8070821D+00	.1086927D+01
.90	.2309332D+01	.9484199D+00	.9351895D+00	.1559978D+00	-.3778533D+01	.1301405D+01	.8535779D+00	.1093755D+01
.95	.2369221D+01	.9474031D+00	.9345027D+00	.1690579D+00	-.3960469D+01	.1417664D+01	.9000330D+00	.1100648D+01
1.00	.2428353D+01	.9464510D+00	.9338671D+00	.1825301D+00	-.4146375D+01	.1538515D+01	.9464510D+00	.1107600D+01

CHECKS

	Mom. check	Check 0
$H_0$	.3310219D-06	-.2677611D-02
$H_1$	-.6401859D-08	
$H_2$	-.8441817D-07	

MOMENTS

	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$
$H_0$	.1003577D+00	.7058859D+00	.5455880D+00	.4449596D+00
$H_1$	.4779838D+00	.3176205D+00	.2378127D+00	.1900554D+00
$H_2$	.4705436D+00	.3128370D+00	.2343158D+00	.1873073D+00

Table 2 (Continued)

$\varpi_0 = .947, \varpi_1 = 000, \varpi_2 = -.947$

$\mu$	$H_0$	$H_1$	$H_2$	$\chi$	$\psi$	$\phi$	$\sigma$	$\theta$
.00	.100000D+01	.100000D+01	.100000D+01	.000000D+00	-.1070175D+01	.000000D+00	.000000D+00	.100000D+01
.05	.1113225D+01	.9924500D+00	.9800758D+00	.3203232D-02	-.1224139D+01	.3193740D-01	.4962250D-01	.1000915D+01
.10	.1205567D+01	.9863482D+00	.9705243D+00	.6941954D-02	-.1361589D+01	.6951971D-01	.9863482D-01	.1003175D+01
.15	.1291400D+01	.9812540D+00	.9639965D+00	.1116085D-01	-.1497417D+01	.1122609D+00	.1471881D+00	.1006364D+01
.20	.1373362D+01	.9769126D+00	.9590989D+00	.1583488D-01	-.1634260D+01	.1599708D+00	.1953825D+00	.1010244D+01
.25	.1452599D+01	.9731561D+00	.9552330D+00	.2094787D-01	-.1773241D+01	.2125444D+00	.2432890D+00	.1014660D+01
.30	.1529731D+01	.9698666D+00	.9520785D+00	.2648774D-01	-.1914966D+01	.2699158D+00	.2909600D+00	.1019503D+01
.35	.1605144D+01	.9669576D+00	.9494424D+00	.3244478D-01	-.2059806D+01	.3320408D+00	.3384352D+00	.1024693D+01
.40	.1679093D+01	.9643640D+00	.9471993D+00	.3881070D-01	-.2208011D+01	.3988883D+00	.3857456D+00	.1030170D+01
.45	.1751759D+01	.9620351D+00	.9452627D+00	.4557823D-01	-.2359757D+01	.4704359D+00	.4329158D+00	.1035889D+01
.50	.1823276D+01	.9599310D+00	.9435710D+00	.5274079D-01	-.2515176D+01	.5466670D+00	.4799655D+00	.1041811D+01
.55	.1893745D+01	.9580197D+00	.9420787D+00	.6029231D-01	-.2674372D+01	.6275692D+00	.5269108D+00	.1047908D+01
.60	.1963246D+01	.9562752D+00	.9407511D+00	.6822715D-01	-.2837425D+01	.7131331D+00	.5737651D+00	.1054157D+01
.65	.2031845D+01	.9546761D+00	.9395615D+00	.7653998D-01	-.3004403D+01	.8033517D+00	.6205394D+00	.1060537D+01
.70	.2099593D+01	.9532044D+00	.9384888D+00	.8522572D-01	-.3175363D+01	.8982197D+00	.6672431D+00	.1067033D+01
.75	.2166534D+01	.9518453D+00	.9375161D+00	.9427954D-01	-.3350353D+01	.9977330D+00	.7138840D+00	.1073631D+01
.80	.2232707D+01	.9505861D+00	.9366296D+00	.1036968D+00	-.3529417D+01	.1101889D+01	.7604689D+00	.1080319D+01
.85	.2298144D+01	.9494159D+00	.9358182D+00	.1134729D+00	-.3712592D+01	.1210685D+01	.8070035D+00	.1087087D+01
.90	.2362871D+01	.9483256D+00	.9350724D+00	.1236036D+00	-.3899912D+01	.1324120D+01	.8534930D+00	.1093928D+01
.95	.2426915D+01	.9473070D+00	.9343845D+00	.1340847D+00	-.4091407D+01	.1442193D+01	.8999417D+00	.1100833D+01
1.00	.2490297D+01	.9463533D+00	.9337479D+00	.1449120D+00	-.4287106D+01	.1564903D+01	.9463533D+00	.1107797D+01

MOMENTS

CHECKS

	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	Mom. check	Check 0
$H_0$	.1802644D+01	.1022016D+01	.7200691D+00	.5571189D+00	.4546764D+01	.3366286D-06	-.1668053D-02
$H_1$	.9637743D+00	.4779433D+00	.3174916D+00	.2377904D+00	.1900371D+00	-.6414046D-08	
$H_2$	.9485338D+00	.4704901D+00	.3127999D+00	.2342874D+00	.1872844D+00	-.8457953D-07	

accuracy of 4 figures holds for us. Further, comparison for the case  $\bar{\omega}_1 = 0.0$  and  $\bar{\omega}_2 = 0.5$  (Rayleigh phase function) with the values published by Lenoble (1970) shows occasional differences in the fourth place. It is to be noted that check given by equation (5) is at times satisfied only to 0.01, probably because of the large number of terms calculated in the lengthy algebra.

### 5. Explanation of the tables

We have computed the *H*- and auxiliary functions for 37 values of  $\bar{\omega}_1$  and  $\bar{\omega}_2$  (see table 1), 21 values of  $\mu$  and 15 values of  $\omega_0$  (0.1, 0.2, 0.4, 0.6, 0.7, 0.8, 0.9, 0.93, 0.95, 0.96, 0.97, 0.98, 0.99, 0.995, 0.997). The values for one pair, viz.  $\bar{\omega}_1 = 0.0$ ,  $\bar{\omega}_2 = -0.95$  are given in table 2; the tables for other pairs of  $\bar{\omega}_1$  and  $\bar{\omega}_2$  can be obtained from the authors.

At the top of each set, the values of  $\omega_0$ ,  $\bar{\omega}_1$  and  $\bar{\omega}_2$  are given. At the bottom of each table the following are given for each of the three *H*- functions : (i) the five moments  $\alpha_n$  ( $n = 0, 1, 2, 3, 4$ ) where  $\alpha_n = \int_0^1 \mu^n H^{(1)}(\mu) d\mu$ , ( $i = 0, 1, 2$ ;  $n = \text{integer}$ ). (ii) the moment check given by equation (4) (mom. check); and (iii) the check given by equation (5) (check 0).

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