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**A METHOD FOR ESTIMATING FRACTIONAL YIELDS
FROM LOW- AND MEDIUM-ENERGY NEUTRON
INDUCED FISSION**



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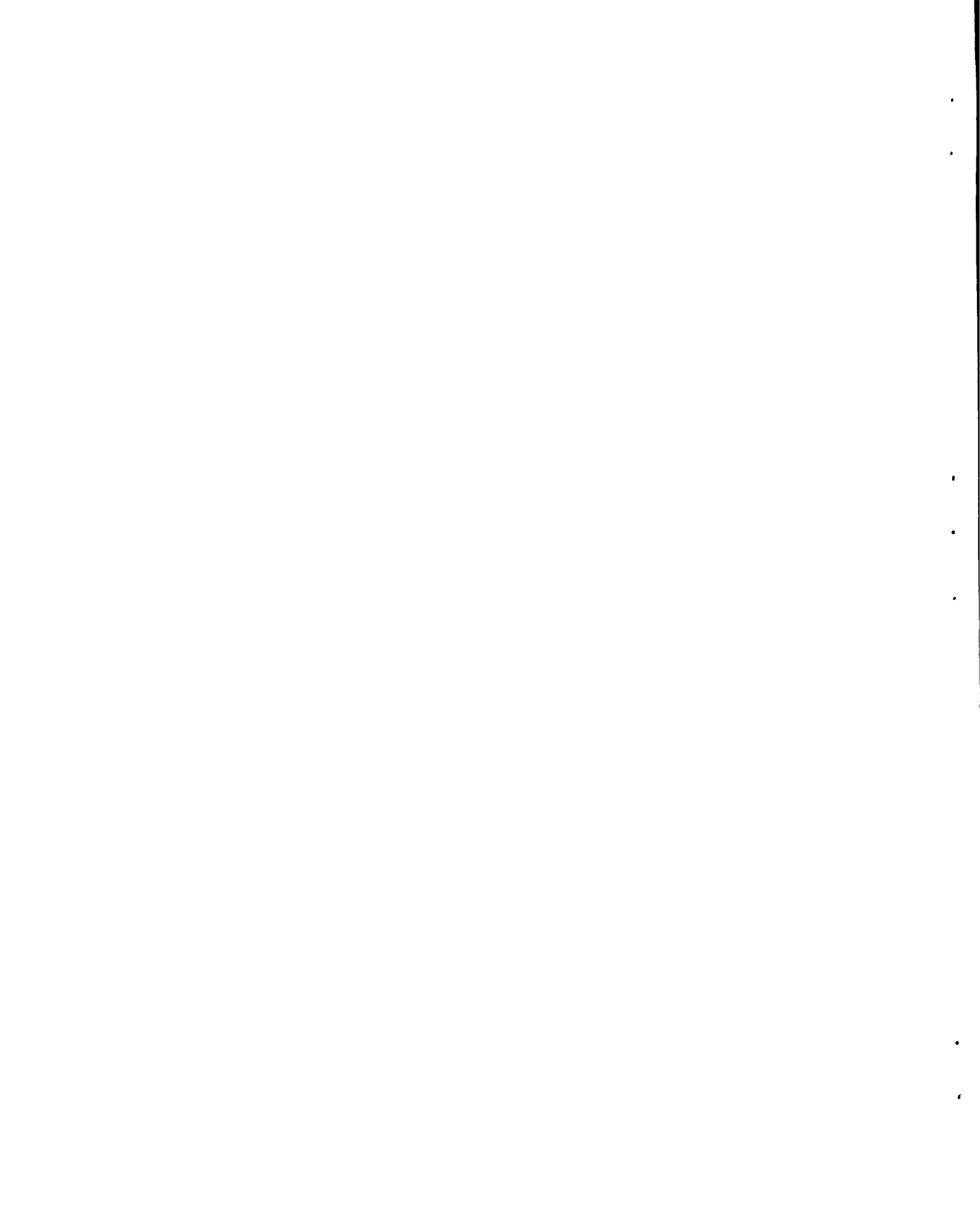
by

Kurt Wolfsberg

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ABSTRACT

A method is given for estimating fractional yields of products from low- and medium-energy neutron induced fission. The method is based on experimental measurements of some fractional independent and cumulative yields, and involves the assumption that yields of products along beta-decay chains are described by a Gaussian function with the same width (σ) for all mass numbers.

Equations are given for estimating Z_p , "the most probable charge." Fractional yields may be obtained from a table which lists fractional yields as a function of $Z - Z_p$.



Although cumulative yields of many long-lived, late members of fission product chains are known for a number of fission processes from experimental measurements, the yields of most of the short-lived, earlier members have not been measured. The measured fractional yields for thermal neutron fission of U^{233} , U^{235} , and Pu^{239} and for 14-MeV neutron fission of U^{235} and U^{238} are summarized in references 1 and 2. The purpose of this report is to present the necessary equations and tables for making rapid predictions of fractional yields from low- and medium-energy neutron induced fission. To make such a prediction by the method given here, one first estimates a value of Z_p , the value of Z for the maximum of the independent yield versus Z curve, for the mass number of the fission process of interest. A charge dispersion curve is then used to estimate the fractional yield of element Z for that mass number. The reader should consult references 1 - 4 for discussion and derivation of the method described below.

Z_p values for thermal neutron fission of U^{235} are used as reference values for given mass numbers, and adjustments are made for other fission processes. For high-yield mass numbers, Z_p^{ref} , the reference Z_p , is approximated by:^{2,3}

$$Z_p^{ref} = 0.4237A - 2.19 \quad (\text{for } 82 < A < 100)$$

and

$$Z_p^{ref} = 0.4331A - 6.06 \quad (\text{for } A > 135) \quad (1)$$

where A is the mass number. Not enough measurements have been made for

low-yield mass numbers to make such generalizations.

The following equations are then used to adjust Z_P^{ref} for a different fission process:⁴

$$\Delta Z_P = 0.5 (Z_F - 92) - 0.21 (A_F - 236) + 0.19 (v_{\text{T}} - 2.43) \quad (2)$$

and

$$Z_P = Z_P^{\text{ref}} + \Delta Z_P \quad (3)$$

where Z_F is the charge of the fissioning nucleus, A_F is the initial mass of the compound nucleus (i.e., the mass of the target nucleus plus one), and v_{T} is the average number of neutrons per fission. Values of v_{T} are obtained from equation 4:⁵

$$v_{\text{T}} = \bar{v}(\text{thermal}) + kE \quad (4)$$

in which E is the incident neutron energy. Values of the constants are given in Table I.

TABLE I

Constants for Equation 4^a

Process	$\bar{v}(\text{thermal})$	k
$U^{233}(n,F)$	2.50	0.115
$U^{235}(n,F)$	2.43	0.135
$U^{238}(n,F)$	2.41	0.138
$Pu^{239}(n,F)$	2.87	0.111

^aFrom reference 5.

Table II lists values of ΔZ_p for some common fission processes; others can be calculated easily.

TABLE II
Values of ΔZ_p

Process	ΔZ_p
$U^{233}(n_{th}, F)$	0.43
$Pu^{239}(n_{th}, F)$	0.25
$U^{235}(n_{14.6}, F)$	0.37
$U^{238}(n_{14.6}, F)$	- 0.25

The fractional cumulative yield of a nuclide with charge Z is given by the Gaussian equation:

$$\begin{aligned} \sum_0^Z (P_n) &= \frac{1}{\sigma(2\pi)^{\frac{1}{2}}} \int_0^{Z+0.5} \exp \left[- \frac{(n - Z_p)^2}{2\sigma^2} \right] dn \\ &= 0.5 + 0.5 f \left[(Z - Z_p + 0.5) / \sqrt{2} \sigma \right] \end{aligned} \quad (5)$$

in which $f(Y)$ is the error function, defined by the expression

$$f(Y) = \frac{2}{\sqrt{\pi}} \int_0^Y \exp(-t^2) dt \quad (6)$$

which can be readily evaluated on a computer.⁶ A value of σ of 0.59 ± 0.06 is assumed to apply for all mass numbers from low- and medium-energy neutron induced fission.¹⁻³ Table III lists values of fractional independent and cumulative yields as a function of $(Z - Z_p)$ for values of

σ of 0.59, 0.53, and 0.65.

To estimate a fractional yield, perform the following steps:

1. Calculate Z_p^{ref} from equation 1.
2. Determine ν_{T} from equation 4 and Table I.
3. Determine ΔZ_p from Table II or from equation 2.
4. Obtain Z_p through equation 3.
5. Look up the fractional yields for the proper value of $(Z - Z_p)$ in Table III for each of the three σ 's.

For example, let us estimate the fractional yields of Ba^{142} from 14.0-MeV neutron fission of U^{235} :

$$A = 142, Z = 56, Z_{\text{F}} = 92, E = 14.0, A_{\text{F}} = 239$$

$$\text{From equation 1: } Z_p^{\text{ref}} = 55.44$$

$$\text{From equation 4 and Table I: } \nu_{\text{T}} = 4.34$$

$$\text{From equation 2: } \Delta Z_p = -0.27$$

$$\text{From equation 3: } Z_p = 55.17$$

$$Z - Z_p = 0.83$$

From Table III:

$$\text{Fractional independent yield} = \begin{cases} 0.276 & \text{for } \sigma = 0.59 \\ 0.261 & \text{for } \sigma = 0.53 \\ 0.285 & \text{for } \sigma = 0.65 \end{cases} \text{ i.e., } \begin{matrix} 0.276 + 0.009 \\ - 0.015 \end{matrix}$$

$$\text{Fractional cumulative yield} = \begin{cases} 0.988 & \text{for } \sigma = 0.59 \\ 0.994 & \text{for } \sigma = 0.53 \\ 0.980 & \text{for } \sigma = 0.65 \end{cases} \text{ i.e., } \begin{matrix} 0.988 + 0.006 \\ - 0.008 \end{matrix}$$

These two fractional yields with their uncertainties represent the fraction of the chain formed (after prompt neutron emission) at $Z = 56$ and the fraction of the chain formed up to and including $Z = 56$, respectively.

A few words of caution in the use of this method are in order. The value of σ of 0.59 ± 0.06 has been determined for thermal neutron fission of U^{235} for mass numbers 91 - 95 and 139 - 143;^{1,3} the value is also consistent with three mass numbers from other fission processes.² It is assumed that the same Gaussian curve is valid for all mass numbers for the fission processes considered. This assumption was made in obtaining equation 1 from experimental data and is again made in estimating a yield from Table III. In reference 2 it is shown that the method of this report predicts most values of Z_p , which have been inferred from measurements of fractional yields, fairly successfully with the average deviation of the predicted Z_p 's from the measured Z_p 's being 0.11 charge unit. However, the Z_p 's predicted for mass numbers 89 - 95 from thermal neutron fission of Pu^{239} are consistently higher than those measured by an average of 0.17 charge unit.

REFERENCES

1. A. C. Wahl, R. L. Ferguson, D. R. Nethaway, D. E. Troutner, and K. Wolfsberg, *Phys. Rev.* 126, 1112 (1962).
2. K. Wolfsberg, to be published in *Phys. Rev.*, 1965.
3. A. C. Wahl, A. E. Norris, and R. L. Ferguson (private communication), 1964; and A. E. Norris, Ph D Thesis, Washington University, 1963, University Microfilms (Ann Arbor, Mich.), L. C. Card No. Mic-64-2325.
4. C. D. Coryell, M. Kaplan, and R. D. Fink, *Can. J. Chem.* 39, 646 (1961).
5. Argonne National Laboratory Report ANL-5800, 2nd Ed., 1963 (unpublished).
6. C. Hastings, Jr., Approximations for Digital Computers, p. 169, Princeton University Press, Princeton, 1955.

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TABLE III

Values of Gaussian Charge Distribution Curves

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
-4.00	1.4997E-09	1.4997E-09	2.0147E-11	2.0147E-11	3.6381E-08	3.6383E-08
-3.99	1.6625E-09	1.6625E-09	2.2878E-11	2.2878E-11	3.9623E-08	3.9626E-08
-3.98	1.8425E-09	1.8425E-09	2.5970E-11	2.5970E-11	4.3145E-08	4.3148E-08
-3.97	2.0414E-09	2.0414E-09	2.9469E-11	2.9469E-11	4.6969E-08	4.6972E-08
-3.96	2.2611E-09	2.2612E-09	3.3429E-11	3.3429E-11	5.1121E-08	5.1124E-08
-3.95	2.5038E-09	2.5039E-09	3.7907E-11	3.7907E-11	5.5626E-08	5.5630E-08
-3.94	2.7718E-09	2.7719E-09	4.2970E-11	4.2970E-11	6.0515E-08	6.0519E-08
-3.93	3.0676E-09	3.0677E-09	4.8692E-11	4.8692E-11	6.5818E-08	6.5823E-08
-3.92	3.3941E-09	3.3941E-09	5.5157E-11	5.5157E-11	7.1569E-08	7.1575E-08
-3.91	3.7542E-09	3.7542E-09	6.2458E-11	6.2458E-11	7.7806E-08	7.7811E-08
-3.90	4.1513E-09	4.1514E-09	7.0702E-11	7.0702E-11	8.4566E-08	8.4572E-08
-3.89	4.5892E-09	4.5893E-09	8.0006E-11	8.0006E-11	9.1892E-08	9.1900E-08
-3.88	5.0719E-09	5.0719E-09	9.0502E-11	9.0502E-11	9.9831E-08	9.9839E-08
-3.87	5.6037E-09	5.6038E-09	1.0234E-10	1.0234E-10	1.0843E-07	1.0844E-07
-3.86	6.1896E-09	6.1897E-09	1.1569E-10	1.1569E-10	1.1774E-07	1.1775E-07
-3.85	6.8349E-09	6.8350E-09	1.3073E-10	1.3073E-10	1.2783E-07	1.2784E-07
-3.84	7.5453E-09	7.5454E-09	1.4767E-10	1.4767E-10	1.3874E-07	1.3875E-07
-3.83	8.3272E-09	8.3273E-09	1.6676E-10	1.6676E-10	1.5056E-07	1.5057E-07
-3.82	9.1876E-09	9.1877E-09	1.8824E-10	1.8824E-10	1.6334E-07	1.6335E-07
-3.81	1.0134E-08	1.0134E-08	2.1242E-10	2.1242E-10	1.7716E-07	1.7718E-07
-3.80	1.1175E-08	1.1175E-08	2.3962E-10	2.3962E-10	1.9211E-07	1.9213E-07
-3.79	1.2319E-08	1.2319E-08	2.7021E-10	2.7021E-10	2.0828E-07	2.0830E-07
-3.78	1.3577E-08	1.3577E-08	3.0460E-10	3.0460E-10	2.2576E-07	2.2578E-07
-3.77	1.4959E-08	1.4959E-08	3.4325E-10	3.4325E-10	2.4464E-07	2.4467E-07
-3.76	1.6477E-08	1.6477E-08	3.8667E-10	3.8667E-10	2.6505E-07	2.6507E-07
-3.75	1.8143E-08	1.8144E-08	4.3543E-10	4.3543E-10	2.8709E-07	2.8712E-07
-3.74	1.9973E-08	1.9974E-08	4.9016E-10	4.9016E-10	3.1089E-07	3.1092E-07
-3.73	2.1982E-08	2.1982E-08	5.5158E-10	5.5158E-10	3.3659E-07	3.3663E-07
-3.72	2.4185E-08	2.4186E-08	6.2049E-10	6.2049E-10	3.6433E-07	3.6437E-07
-3.71	2.6602E-08	2.6603E-08	6.9776E-10	6.9776E-10	3.9426E-07	3.9431E-07
-3.70	2.9253E-08	2.9253E-08	7.8438E-10	7.8438E-10	4.2656E-07	4.2661E-07
-3.69	3.2158E-08	3.2159E-08	8.8145E-10	8.8145E-10	4.6140E-07	4.6146E-07
-3.68	3.5343E-08	3.5343E-08	9.9018E-10	9.9019E-10	4.9897E-07	4.9903E-07
-3.67	3.8831E-08	3.8832E-08	1.1119E-09	1.1120E-09	5.3947E-07	5.3954E-07
-3.66	4.2653E-08	4.2654E-08	1.2483E-09	1.2483E-09	5.8313E-07	5.8321E-07
-3.65	4.6837E-08	4.6838E-08	1.4008E-09	1.4008E-09	6.3018E-07	6.3027E-07
-3.64	5.1417E-08	5.1418E-08	1.5714E-09	1.5714E-09	6.8087E-07	6.8097E-07
-3.63	5.6430E-08	5.6431E-08	1.7622E-09	1.7622E-09	7.3547E-07	7.3558E-07
-3.62	6.1914E-08	6.1915E-08	1.9755E-09	1.9755E-09	7.9427E-07	7.9439E-07
-3.61	6.7912E-08	6.7914E-08	2.2138E-09	2.2138E-09	8.5757E-07	8.5770E-07
-3.60	7.4471E-08	7.4472E-08	2.4800E-09	2.4800E-09	9.2571E-07	9.2585E-07
-3.59	8.1640E-08	8.1642E-08	2.7772E-09	2.7772E-09	9.9903E-07	9.9919E-07
-3.58	8.9474E-08	8.9476E-08	3.1090E-09	3.1090E-09	1.0779E-06	1.0781E-06
-3.57	9.8033E-08	9.8035E-08	3.4792E-09	3.4792E-09	1.1628E-06	1.1629E-06
-3.56	1.0738E-07	1.0738E-07	3.8922E-09	3.8922E-09	1.2540E-06	1.2542E-06
-3.55	1.1759E-07	1.1759E-07	4.3527E-09	4.3527E-09	1.3521E-06	1.3523E-06
-3.54	1.2873E-07	1.2873E-07	4.8659E-09	4.8659E-09	1.4575E-06	1.4578E-06
-3.53	1.4088E-07	1.4089E-07	5.4378E-09	5.4379E-09	1.5708E-06	1.5711E-06
-3.52	1.5415E-07	1.5415E-07	6.0749E-09	6.0749E-09	1.6925E-06	1.6928E-06
-3.51	1.6861E-07	1.6861E-07	6.7841E-09	6.7842E-09	1.8232E-06	1.8236E-06

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= C.65	
	FRACTION OF CHAIN INDEPENDENT	CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	CUMULATIVE
-3.50	1.8438E-07	1.8438E-07	7.5736E-09	7.5737E-09	1.9636E-06	1.9640E-06
-3.49	2.0157E-07	2.0157E-07	8.4521E-09	8.4521E-09	2.1143E-06	2.1147E-06
-3.48	2.2030E-07	2.2030E-07	9.4291E-09	9.4291E-09	2.2761E-06	2.2765E-06
-3.47	2.4070E-07	2.4071E-07	1.0515E-08	1.0516E-08	2.4496E-06	2.4501E-06
-3.46	2.6292E-07	2.6293E-07	1.1723E-08	1.1723E-08	2.6358E-06	2.6364E-06
-3.45	2.8711E-07	2.8712E-07	1.3065E-08	1.3065E-08	2.8355E-06	2.8362E-06
-3.44	3.1344E-07	3.1345E-07	1.4555E-08	1.4555E-08	3.0497E-06	3.0504E-06
-3.43	3.4209E-07	3.4210E-07	1.6209E-08	1.6209E-08	3.2793E-06	3.2800E-06
-3.42	3.7325E-07	3.7327E-07	1.8045E-08	1.8045E-08	3.5253E-06	3.5261E-06
-3.41	4.0714E-07	4.0716E-07	2.0083E-08	2.0083E-08	3.7890E-06	3.7899E-06
-3.40	4.4399E-07	4.4400E-07	2.2342E-08	2.2342E-08	4.0714E-06	4.0724E-06
-3.39	4.8403E-07	4.8405E-07	2.4848E-08	2.4848E-08	4.3739E-06	4.3750E-06
-3.38	5.2754E-07	5.2756E-07	2.7624E-08	2.7624E-08	4.6979E-06	4.6991E-06
-3.37	5.7400E-07	5.7403E-07	3.0701E-08	3.0701E-08	5.0446E-06	5.0459E-06
-3.36	6.2612E-07	6.2615E-07	3.4108E-08	3.4108E-08	5.4157E-06	5.4172E-06
-3.35	6.8183E-07	6.8187E-07	3.7880E-08	3.7880E-08	5.8129E-06	5.8144E-06
-3.34	7.4230E-07	7.4234E-07	4.2055E-08	4.2055E-08	6.2377E-06	6.2394E-06
-3.33	8.0790E-07	8.0795E-07	4.6673E-08	4.6674E-08	6.6920E-06	6.6939E-06
-3.32	8.7906E-07	8.7911E-07	5.1782E-08	5.1782E-08	7.1778E-06	7.1799E-06
-3.31	9.5623E-07	9.5628E-07	5.7429E-08	5.7429E-08	7.6971E-06	7.6994E-06
-3.30	1.0399E-06	1.0399E-06	6.3670E-08	6.3671E-08	8.2521E-06	8.2547E-06
-3.29	1.1305E-06	1.1306E-06	7.0566E-08	7.0566E-08	8.8452E-06	8.8479E-06
-3.28	1.2287E-06	1.2288E-06	7.8181E-08	7.8181E-08	9.4787E-06	9.4817E-06
-3.27	1.3351E-06	1.3352E-06	8.6588E-08	8.6589E-08	1.0155E-05	1.0159E-05
-3.26	1.4503E-06	1.4504E-06	9.5866E-08	9.5867E-08	1.0878E-05	1.0881E-05
-3.25	1.5750E-06	1.5751E-06	1.0610E-07	1.0610E-07	1.1649E-05	1.1653E-05
-3.24	1.7099E-06	1.7100E-06	1.1739E-07	1.1739E-07	1.2472E-05	1.2476E-05
-3.23	1.8559E-06	1.8560E-06	1.2983E-07	1.2983E-07	1.3350E-05	1.3355E-05
-3.22	2.0130E-06	2.0139E-06	1.4355E-07	1.4355E-07	1.4287E-05	1.4292E-05
-3.21	2.1845E-06	2.1846E-06	1.5866E-07	1.5866E-07	1.5286E-05	1.5291E-05
-3.20	2.3690E-06	2.3692E-06	1.7529E-07	1.7529E-07	1.6351E-05	1.6357E-05
-3.19	2.5684E-06	2.5686E-06	1.9361E-07	1.9361E-07	1.7486E-05	1.7493E-05
-3.18	2.7838E-06	2.7841E-06	2.1376E-07	2.1376E-07	1.8696E-05	1.8704E-05
-3.17	3.0165E-06	3.0168E-06	2.3594E-07	2.3594E-07	1.9985E-05	1.9993E-05
-3.16	3.2677E-06	3.2680E-06	2.6032E-07	2.6032E-07	2.1358E-05	2.1367E-05
-3.15	3.5380E-06	3.5392E-06	2.8712E-07	2.8712E-07	2.2821E-05	2.2831E-05
-3.14	3.8314E-06	3.8318E-06	3.1657E-07	3.1658E-07	2.4378E-05	2.4389E-05
-3.13	4.1471E-06	4.1474E-06	3.4893E-07	3.4893E-07	2.6035E-05	2.6047E-05
-3.12	4.4874E-06	4.4879E-06	3.8446E-07	3.8447E-07	2.7799E-05	2.7812E-05
-3.11	4.8544E-06	4.8549E-06	4.2346E-07	4.2347E-07	2.9676E-05	2.9690E-05
-3.10	5.2500E-06	5.2505E-06	4.6626E-07	4.6627E-07	3.1672E-05	3.1687E-05
-3.09	5.6762E-06	5.6768E-06	5.1321E-07	5.1322E-07	3.3795E-05	3.3812E-05
-3.08	6.1354E-06	6.1360E-06	5.6469E-07	5.6470E-07	3.6052E-05	3.6070E-05
-3.07	6.6290E-06	6.6305E-06	6.2113E-07	6.2113E-07	3.8451E-05	3.8471E-05
-3.06	7.1621E-06	7.1630E-06	6.8296E-07	6.8297E-07	4.1000E-05	4.1022E-05
-3.05	7.7351E-06	7.7360E-06	7.5070E-07	7.5071E-07	4.3709E-05	4.3733E-05
-3.04	8.3516E-06	8.3525E-06	8.2487E-07	8.2488E-07	4.6586E-05	4.6612E-05
-3.03	9.0147E-06	9.0158E-06	9.0606E-07	9.0607E-07	4.9641E-05	4.9669E-05
-3.02	9.7270E-06	9.7290E-06	9.9489E-07	9.9491E-07	5.2885E-05	5.2916E-05
-3.01	1.0494E-05	1.0496E-05	1.0921E-06	1.0921E-06	5.6328E-05	5.6361E-05

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
-3.00	1.1318E-05	1.1320E-05	1.1983E-06	1.1983E-06	5.9981E-05	6.0018E-05
-2.99	1.2204E-05	1.2205E-05	1.3145E-06	1.3145E-06	6.3858E-05	6.3897E-05
-2.98	1.3154E-05	1.3156E-05	1.4414E-06	1.4414E-06	6.7969E-05	6.8012E-05
-2.97	1.4176E-05	1.4178E-05	1.5800E-06	1.5800E-06	7.2329E-05	7.2376E-05
-2.96	1.5272E-05	1.5274E-05	1.7313E-06	1.7314E-06	7.6951E-05	7.7002E-05
-2.95	1.6448E-05	1.6451E-05	1.8965E-06	1.8966E-06	8.1850E-05	8.1905E-05
-2.94	1.7710E-05	1.7713E-05	2.0768E-06	2.0768E-06	8.7041E-05	8.7102E-05
-2.93	1.9064E-05	1.9067E-05	2.2734E-06	2.2734E-06	9.2541E-05	9.2607E-05
-2.92	2.0516E-05	2.0519E-05	2.4877E-06	2.4878E-06	9.8366E-05	9.8438E-05
-2.91	2.2072E-05	2.2075E-05	2.7214E-06	2.7214E-06	1.0453E-04	1.0461E-04
-2.90	2.3739E-05	2.3743E-05	2.9759E-06	2.9760E-06	1.1107E-04	1.1115E-04
-2.89	2.5526E-05	2.5530E-05	3.2532E-06	3.2533E-06	1.1798E-04	1.1807E-04
-2.88	2.7439E-05	2.7444E-05	3.5551E-06	3.5552E-06	1.2529E-04	1.2539E-04
-2.87	2.9488E-05	2.9494E-05	3.8836E-06	3.8837E-06	1.3303E-04	1.3314E-04
-2.86	3.1681E-05	3.1688E-05	4.2411E-06	4.2412E-06	1.4121E-04	1.4133E-04
-2.85	3.4029E-05	3.4035E-05	4.6299E-06	4.6301E-06	1.4987E-04	1.4999E-04
-2.84	3.6539E-05	3.6547E-05	5.0527E-06	5.0528E-06	1.5901E-04	1.5915E-04
-2.83	3.9225E-05	3.9233E-05	5.5121E-06	5.5123E-06	1.6868E-04	1.6883E-04
-2.82	4.2096E-05	4.2105E-05	6.0113E-06	6.0115E-06	1.7890E-04	1.7906E-04
-2.81	4.5165E-05	4.5175E-05	6.5534E-06	6.5536E-06	1.8969E-04	1.8987E-04
-2.80	4.8445E-05	4.8456E-05	7.1420E-06	7.1422E-06	2.0109E-04	2.0128E-04
-2.79	5.1948E-05	5.1961E-05	7.7808E-06	7.7810E-06	2.1313E-04	2.1334E-04
-2.78	5.5690E-05	5.5704E-05	8.4738E-06	8.4741E-06	2.2583E-04	2.2606E-04
-2.77	5.9685E-05	5.9700E-05	9.2254E-06	9.2258E-06	2.3924E-04	2.3949E-04
-2.76	6.3949E-05	6.3965E-05	1.0040E-05	1.0041E-05	2.5339E-04	2.5366E-04
-2.75	6.8499E-05	6.8517E-05	1.0923E-05	1.0924E-05	2.6832E-04	2.6861E-04
-2.74	7.3352E-05	7.3372E-05	1.1880E-05	1.1881E-05	2.8406E-04	2.8437E-04
-2.73	7.8529E-05	7.8551E-05	1.2916E-05	1.2917E-05	3.0066E-04	3.0100E-04
-2.72	8.4047E-05	8.4071E-05	1.4038E-05	1.4039E-05	3.1816E-04	3.1852E-04
-2.71	8.9929E-05	8.9955E-05	1.5252E-05	1.5253E-05	3.3660E-04	3.3700E-04
-2.70	9.6196E-05	9.6225E-05	1.6565E-05	1.6566E-05	3.5603E-04	3.5646E-04
-2.69	1.0287E-04	1.0290E-04	1.7986E-05	1.7986E-05	3.7650E-04	3.7696E-04
-2.68	1.0998E-04	1.1002E-04	1.9521E-05	1.9522E-05	3.9806E-04	3.9856E-04
-2.67	1.1755E-04	1.1759E-04	2.1180E-05	2.1181E-05	4.2075E-04	4.2129E-04
-2.66	1.2560E-04	1.2565E-04	2.2973E-05	2.2974E-05	4.4464E-04	4.4523E-04
-2.65	1.3418E-04	1.3422E-04	2.4909E-05	2.4910E-05	4.6979E-04	4.7042E-04
-2.64	1.4329E-04	1.4334E-04	2.6998E-05	2.7000E-05	4.9624E-04	4.9692E-04
-2.63	1.5299E-04	1.5304E-04	2.9253E-05	2.9255E-05	5.2407E-04	5.2481E-04
-2.62	1.6329E-04	1.6335E-04	3.1686E-05	3.1688E-05	5.5334E-04	5.5413E-04
-2.61	1.7424E-04	1.7431E-04	3.4309E-05	3.4312E-05	5.8411E-04	5.8496E-04
-2.60	1.8588E-04	1.8596E-04	3.7137E-05	3.7140E-05	6.1645E-04	6.1738E-04
-2.59	1.9824E-04	1.9832E-04	4.0185E-05	4.0188E-05	6.5044E-04	6.5144E-04
-2.58	2.1137E-04	2.1146E-04	4.3467E-05	4.3471E-05	6.8615E-04	6.8723E-04
-2.57	2.2530E-04	2.2540E-04	4.7003E-05	4.7006E-05	7.2366E-04	7.2483E-04
-2.56	2.4008E-04	2.4019E-04	5.0808E-05	5.0812E-05	7.6306E-04	7.6431E-04
-2.55	2.5577E-04	2.5589E-04	5.4903E-05	5.4907E-05	8.0442E-04	8.0577E-04
-2.54	2.7241E-04	2.7254E-04	5.9307E-05	5.9312E-05	8.4783E-04	8.4929E-04
-2.53	2.9005E-04	2.9019E-04	6.4044E-05	6.4049E-05	8.9339E-04	8.9496E-04
-2.52	3.0875E-04	3.0891E-04	6.9135E-05	6.9141E-05	9.4119E-04	9.4288E-04
-2.51	3.2857E-04	3.2874E-04	7.4606E-05	7.4613E-05	9.9132E-04	9.9314E-04

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59 FRACTION OF CHAIN		SIGMA= 0.53 FRACTION OF CHAIN		SIGMA= 0.65 FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
-2.50	3.4956E-04	3.4975E-04	8.0482E-05	8.0490E-05	1.0439E-03	1.0459E-03
-2.49	3.7180E-04	3.7200E-04	8.6793E-05	8.6801E-05	1.0990E-03	1.1011E-03
-2.48	3.9534E-04	3.9556E-04	9.3566E-05	9.3575E-05	1.1568E-03	1.1591E-03
-2.47	4.2026E-04	4.2050E-04	1.0083E-04	1.0084E-04	1.2173E-03	1.2198E-03
-2.46	4.4664E-04	4.4690E-04	1.0863E-04	1.0864E-04	1.2808E-03	1.2834E-03
-2.45	4.7453E-04	4.7482E-04	1.1699E-04	1.1700E-04	1.3472E-03	1.3500E-03
-2.44	5.0404E-04	5.0435E-04	1.2595E-04	1.2596E-04	1.4168E-03	1.4198E-03
-2.43	5.3523E-04	5.3557E-04	1.3555E-04	1.3556E-04	1.4896E-03	1.4929E-03
-2.42	5.6820E-04	5.6858E-04	1.4583E-04	1.4585E-04	1.5658E-03	1.5693E-03
-2.41	6.0304E-04	6.0345E-04	1.5684E-04	1.5686E-04	1.6456E-03	1.6494E-03
-2.40	6.3985E-04	6.4029E-04	1.6863E-04	1.6865E-04	1.7290E-03	1.7331E-03
-2.39	6.7871E-04	6.7920E-04	1.8123E-04	1.8126E-04	1.8163E-03	1.8207E-03
-2.38	7.1975E-04	7.2027E-04	1.9472E-04	1.9475E-04	1.9076E-03	1.9123E-03
-2.37	7.6306E-04	7.6363E-04	2.0914E-04	2.0917E-04	2.0030E-03	2.0080E-03
-2.36	8.0876E-04	8.0938E-04	2.2455E-04	2.2459E-04	2.1027E-03	2.1081E-03
-2.35	8.5696E-04	8.5764E-04	2.4102E-04	2.4106E-04	2.2069E-03	2.2127E-03
-2.34	9.0780E-04	9.0854E-04	2.5861E-04	2.5865E-04	2.3157E-03	2.3220E-03
-2.33	9.6139E-04	9.6219E-04	2.7739E-04	2.7743E-04	2.4294E-03	2.4361E-03
-2.32	1.0179E-03	1.0187E-03	2.9743E-04	2.9748E-04	2.5481E-03	2.5553E-03
-2.31	1.0774E-03	1.0783E-03	3.1881E-04	3.1887E-04	2.6720E-03	2.6797E-03
-2.30	1.1401E-03	1.1411E-03	3.4162E-04	3.4168E-04	2.8014E-03	2.8096E-03
-2.29	1.2061E-03	1.2072E-03	3.6593E-04	3.6600E-04	2.9363E-03	2.9451E-03
-2.28	1.2756E-03	1.2768E-03	3.9185E-04	3.9192E-04	3.0771E-03	3.0865E-03
-2.27	1.3487E-03	1.3500E-03	4.1945E-04	4.1954E-04	3.2239E-03	3.2340E-03
-2.26	1.4256E-03	1.4271E-03	4.4886E-04	4.4895E-04	3.3769E-03	3.3878E-03
-2.25	1.5066E-03	1.5081E-03	4.8016E-04	4.8027E-04	3.5365E-03	3.5482E-03
-2.24	1.5917E-03	1.5934E-03	5.1348E-04	5.1360E-04	3.7028E-03	3.7153E-03
-2.23	1.6811E-03	1.6830E-03	5.4893E-04	5.4906E-04	3.8761E-03	3.8894E-03
-2.22	1.7751E-03	1.7771E-03	5.8662E-04	5.8676E-04	4.0565E-03	4.0708E-03
-2.21	1.8739E-03	1.8761E-03	6.2670E-04	6.2686E-04	4.2445E-03	4.2598E-03
-2.20	1.9776E-03	1.9800E-03	6.6929E-04	6.6946E-04	4.4402E-03	4.4566E-03
-2.19	2.0865E-03	2.0891E-03	7.1453E-04	7.1473E-04	4.6439E-03	4.6614E-03
-2.18	2.2009E-03	2.2037E-03	7.6258E-04	7.6280E-04	4.8559E-03	4.8746E-03
-2.17	2.3209E-03	2.3239E-03	8.1360E-04	8.1383E-04	5.0765E-03	5.0965E-03
-2.16	2.4467E-03	2.4500E-03	8.6773E-04	8.6799E-04	5.3059E-03	5.3272E-03
-2.15	2.5787E-03	2.5823E-03	9.2516E-04	9.2545E-04	5.5445E-03	5.5673E-03
-2.14	2.7171E-03	2.7210E-03	9.8606E-04	9.8638E-04	5.7925E-03	5.8169E-03
-2.13	2.8622E-03	2.8664E-03	1.0506E-03	1.0510E-03	6.0503E-03	6.0764E-03
-2.12	3.0142E-03	3.0187E-03	1.1190E-03	1.1194E-03	6.3182E-03	6.3461E-03
-2.11	3.1735E-03	3.1783E-03	1.1915E-03	1.1919E-03	6.5966E-03	6.6263E-03
-2.10	3.3402E-03	3.3455E-03	1.2683E-03	1.2687E-03	6.8857E-03	6.9174E-03
-2.09	3.5149E-03	3.5205E-03	1.3495E-03	1.3500E-03	7.1859E-03	7.2197E-03
-2.08	3.6976E-03	3.7037E-03	1.4355E-03	1.4361E-03	7.4976E-03	7.5337E-03
-2.07	3.8888E-03	3.8955E-03	1.5265E-03	1.5271E-03	7.8211E-03	7.8596E-03
-2.06	4.0889E-03	4.0960E-03	1.6226E-03	1.6233E-03	8.1568E-03	8.1978E-03
-2.05	4.2981E-03	4.3058E-03	1.7243E-03	1.7251E-03	8.5051E-03	8.5488E-03
-2.04	4.5168E-03	4.5251E-03	1.8317E-03	1.8326E-03	8.8663E-03	8.9129E-03
-2.03	4.7453E-03	4.7543E-03	1.9452E-03	1.9461E-03	9.2408E-03	9.2905E-03
-2.02	4.9841E-03	4.9939E-03	2.0651E-03	2.0660E-03	9.6291E-03	9.6820E-03
-2.01	5.2336E-03	5.2441E-03	2.1915E-03	2.1926E-03	1.0031E-02	1.0088E-02

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
-2.00	5.4941E-03	5.5054E-03	2.3250E-03	2.3262E-03	1.0448E-02	1.0508E-02
-1.99	5.7660E-03	5.7782E-03	2.4658E-03	2.4671E-03	1.0880E-02	1.0944E-02
-1.98	6.0498E-03	6.0630E-03	2.6143E-03	2.6157E-03	1.1328E-02	1.1396E-02
-1.97	6.3459E-03	6.3601E-03	2.7707E-03	2.7723E-03	1.1791E-02	1.1863E-02
-1.96	6.6547E-03	6.6700E-03	2.9356E-03	2.9374E-03	1.2270E-02	1.2347E-02
-1.95	6.9768E-03	6.9932E-03	3.1093E-03	3.1112E-03	1.2767E-02	1.2849E-02
-1.94	7.3125E-03	7.3302E-03	3.2922E-03	3.2942E-03	1.3280E-02	1.3367E-02
-1.93	7.6623E-03	7.6814E-03	3.4846E-03	3.4869E-03	1.3811E-02	1.3904E-02
-1.92	8.0268E-03	8.0473E-03	3.6872E-03	3.6897E-03	1.4361E-02	1.4459E-02
-1.91	8.4063E-03	8.4284E-03	3.9002E-03	3.9029E-03	1.4928E-02	1.5033E-02
-1.90	8.8016E-03	8.8253E-03	4.1241E-03	4.1271E-03	1.5515E-02	1.5627E-02
-1.89	9.2130E-03	9.2385E-03	4.3596E-03	4.3628E-03	1.6122E-02	1.6240E-02
-1.88	9.6411E-03	9.6685E-03	4.6069E-03	4.6104E-03	1.6749E-02	1.6874E-02
-1.87	1.0086E-02	1.0116E-02	4.8667E-03	4.8706E-03	1.7396E-02	1.7529E-02
-1.86	1.0550E-02	1.0581E-02	5.1394E-03	5.1437E-03	1.8065E-02	1.8206E-02
-1.85	1.1031E-02	1.1065E-02	5.4257E-03	5.4303E-03	1.8755E-02	1.8905E-02
-1.84	1.1532E-02	1.1568E-02	5.7260E-03	5.7311E-03	1.9467E-02	1.9626E-02
-1.83	1.2052E-02	1.2091E-02	6.0410E-03	6.0466E-03	2.0202E-02	2.0371E-02
-1.82	1.2592E-02	1.2634E-02	6.3713E-03	6.3773E-03	2.0961E-02	2.1140E-02
-1.81	1.3153E-02	1.3198E-02	6.7174E-03	6.7240E-03	2.1743E-02	2.1933E-02
-1.80	1.3736E-02	1.3784E-02	7.0801E-03	7.0872E-03	2.2550E-02	2.2751E-02
-1.79	1.4340E-02	1.4392E-02	7.4676E-03	7.4766E-03	2.3381E-02	2.3594E-02
-1.78	1.4968E-02	1.5023E-02	7.8757E-03	7.8859E-03	2.4238E-02	2.4464E-02
-1.77	1.5618E-02	1.5678E-02	8.2736E-03	8.2828E-03	2.5121E-02	2.5360E-02
-1.76	1.6293E-02	1.6357E-02	8.7089E-03	8.7190E-03	2.6031E-02	2.6284E-02
-1.75	1.6992E-02	1.7061E-02	9.1642E-03	9.1751E-03	2.6967E-02	2.7236E-02
-1.74	1.7717E-02	1.7791E-02	9.6402E-03	9.6520E-03	2.7932E-02	2.8216E-02
-1.73	1.8468E-02	1.8547E-02	1.0138E-02	1.0150E-02	2.8925E-02	2.9226E-02
-1.72	1.9246E-02	1.9330E-02	1.0657E-02	1.0671E-02	2.9947E-02	3.0265E-02
-1.71	2.0052E-02	2.0142E-02	1.1200E-02	1.1215E-02	3.0998E-02	3.1335E-02
-1.70	2.0885E-02	2.0982E-02	1.1766E-02	1.1783E-02	3.2079E-02	3.2436E-02
-1.69	2.1748E-02	2.1851E-02	1.2358E-02	1.2375E-02	3.3192E-02	3.3568E-02
-1.68	2.2641E-02	2.2751E-02	1.2974E-02	1.2994E-02	3.4335E-02	3.4733E-02
-1.67	2.3564E-02	2.3682E-02	1.3617E-02	1.3638E-02	3.5510E-02	3.5931E-02
-1.66	2.4519E-02	2.4644E-02	1.4288E-02	1.4311E-02	3.6718E-02	3.7163E-02
-1.65	2.5505E-02	2.5639E-02	1.4986E-02	1.5011E-02	3.7958E-02	3.8429E-02
-1.64	2.6525E-02	2.6668E-02	1.5714E-02	1.5741E-02	3.9233E-02	3.9730E-02
-1.63	2.7578E-02	2.7731E-02	1.6472E-02	1.6501E-02	4.0541E-02	4.1066E-02
-1.62	2.8666E-02	2.8829E-02	1.7260E-02	1.7292E-02	4.1884E-02	4.2439E-02
-1.61	2.9788E-02	2.9963E-02	1.8081E-02	1.8116E-02	4.3263E-02	4.3848E-02
-1.60	3.0947E-02	3.1133E-02	1.8935E-02	1.8972E-02	4.4678E-02	4.5295E-02
-1.59	3.2143E-02	3.2341E-02	1.9823E-02	1.9863E-02	4.6129E-02	4.6780E-02
-1.58	3.3377E-02	3.3588E-02	2.0746E-02	2.0789E-02	4.7617E-02	4.8304E-02
-1.57	3.4649E-02	3.4874E-02	2.1704E-02	2.1751E-02	4.9143E-02	4.9867E-02
-1.56	3.5960E-02	3.6200E-02	2.2700E-02	2.2751E-02	5.0707E-02	5.1471E-02
-1.55	3.7311E-02	3.7567E-02	2.3734E-02	2.3789E-02	5.2309E-02	5.3115E-02
-1.54	3.8703E-02	3.8976E-02	2.4808E-02	2.4867E-02	5.3952E-02	5.4801E-02
-1.53	4.0137E-02	4.0427E-02	2.5921E-02	2.5985E-02	5.5634E-02	5.6528E-02
-1.52	4.1614E-02	4.1923E-02	2.7076E-02	2.7145E-02	5.7356E-02	5.8299E-02
-1.51	4.3134E-02	4.3462E-02	2.8274E-02	2.8348E-02	5.9119E-02	6.0112E-02

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59 FRACTION OF CHAIN		SIGMA= 0.53 FRACTION OF CHAIN		SIGMA= 0.65 FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
-1.50	4.4697E-02	4.5047E-02	2.9515E-02	2.9595E-02	6.0924E-02	6.1970E-02
-1.49	4.6306E-02	4.6678E-02	3.0801E-02	3.0887E-02	6.2770E-02	6.3872E-02
-1.48	4.7961E-02	4.8357E-02	3.2132E-02	3.2226E-02	6.4659E-02	6.5819E-02
-1.47	4.9662E-02	5.0083E-02	3.3511E-02	3.3612E-02	6.6591E-02	6.7811E-02
-1.46	5.1411E-02	5.1858E-02	3.4938E-02	3.5047E-02	6.8567E-02	6.9850E-02
-1.45	5.3207E-02	5.3682E-02	3.6415E-02	3.6532E-02	7.0586E-02	7.1936E-02
-1.44	5.5053E-02	5.5557E-02	3.7941E-02	3.8067E-02	7.2649E-02	7.4069E-02
-1.43	5.6948E-02	5.7483E-02	3.9520E-02	3.9655E-02	7.4757E-02	7.6250E-02
-1.42	5.8893E-02	5.9462E-02	4.1151E-02	4.1297E-02	7.6911E-02	7.8480E-02
-1.41	6.0890E-02	6.1493E-02	4.2836E-02	4.2993E-02	7.9109E-02	8.0759E-02
-1.40	6.2938E-02	6.3579E-02	4.4576E-02	4.4745E-02	8.1354E-02	8.3087E-02
-1.39	6.5039E-02	6.5719E-02	4.6373E-02	4.6554E-02	8.3645E-02	8.5466E-02
-1.38	6.7194E-02	6.7914E-02	4.8226E-02	4.8421E-02	8.5983E-02	8.7895E-02
-1.37	6.9402E-02	7.0165E-02	5.0138E-02	5.0348E-02	8.8367E-02	9.0375E-02
-1.36	7.1665E-02	7.2474E-02	5.2110E-02	5.2335E-02	9.0799E-02	9.2907E-02
-1.35	7.3982E-02	7.4840E-02	5.4143E-02	5.4384E-02	9.3279E-02	9.5491E-02
-1.34	7.6356E-02	7.7265E-02	5.6237E-02	5.6496E-02	9.5806E-02	9.8128E-02
-1.33	7.8787E-02	7.9749E-02	5.8395E-02	5.8672E-02	9.8381E-02	1.0082E-01
-1.32	8.1274E-02	8.2293E-02	6.0616E-02	6.0913E-02	1.0100E-01	1.0356E-01
-1.31	8.3819E-02	8.4897E-02	6.2902E-02	6.3221E-02	1.0368E-01	1.0636E-01
-1.30	8.6422E-02	8.7563E-02	6.5255E-02	6.5596E-02	1.0640E-01	1.0921E-01
-1.29	8.9084E-02	9.0291E-02	6.7674E-02	6.8040E-02	1.0917E-01	1.1211E-01
-1.28	9.1804E-02	9.3081E-02	7.0162E-02	7.0554E-02	1.1199E-01	1.1507E-01
-1.27	9.4585E-02	9.5935E-02	7.2718E-02	7.3138E-02	1.1485E-01	1.1809E-01
-1.26	9.7425E-02	9.8852E-02	7.5345E-02	7.5794E-02	1.1777E-01	1.2116E-01
-1.25	1.0033E-01	1.0183E-01	7.8043E-02	7.8523E-02	1.2074E-01	1.2428E-01
-1.24	1.0332E-01	1.0488E-01	8.0812E-02	8.1326E-02	1.2375E-01	1.2747E-01
-1.23	1.0631E-01	1.0799E-01	8.3654E-02	8.4204E-02	1.2682E-01	1.3071E-01
-1.22	1.0939E-01	1.1117E-01	8.6570E-02	8.7157E-02	1.2993E-01	1.3400E-01
-1.21	1.1254E-01	1.1442E-01	8.9560E-02	9.0187E-02	1.3309E-01	1.3735E-01
-1.20	1.1575E-01	1.1773E-01	9.2625E-02	9.3295E-02	1.3630E-01	1.4076E-01
-1.19	1.1902E-01	1.2111E-01	9.5766E-02	9.6481E-02	1.3956E-01	1.4423E-01
-1.18	1.2235E-01	1.2455E-01	9.8983E-02	9.9746E-02	1.4287E-01	1.4775E-01
-1.17	1.2574E-01	1.2807E-01	1.0228E-01	1.0309E-01	1.4623E-01	1.5133E-01
-1.16	1.2920E-01	1.3165E-01	1.0565E-01	1.0652E-01	1.4964E-01	1.5496E-01
-1.15	1.3272E-01	1.3530E-01	1.0910E-01	1.1002E-01	1.5309E-01	1.5866E-01
-1.14	1.3630E-01	1.3902E-01	1.1263E-01	1.1361E-01	1.5659E-01	1.6241E-01
-1.13	1.3994E-01	1.4281E-01	1.1624E-01	1.1729E-01	1.6014E-01	1.6622E-01
-1.12	1.4365E-01	1.4667E-01	1.1992E-01	1.2104E-01	1.6374E-01	1.7008E-01
-1.11	1.4742E-01	1.5060E-01	1.2369E-01	1.2488E-01	1.6738E-01	1.7401E-01
-1.10	1.5125E-01	1.5459E-01	1.2754E-01	1.2881E-01	1.7107E-01	1.7799E-01
-1.09	1.5514E-01	1.5866E-01	1.3146E-01	1.3281E-01	1.7480E-01	1.8202E-01
-1.08	1.5909E-01	1.6280E-01	1.3547E-01	1.3691E-01	1.7858E-01	1.8612E-01
-1.07	1.6311E-01	1.6700E-01	1.3956E-01	1.4109E-01	1.8241E-01	1.9027E-01
-1.06	1.6718E-01	1.7128E-01	1.4373E-01	1.4535E-01	1.8628E-01	1.9447E-01
-1.05	1.7131E-01	1.7562E-01	1.4798E-01	1.4970E-01	1.9019E-01	1.9874E-01
-1.04	1.7551E-01	1.8003E-01	1.5230E-01	1.5414E-01	1.9414E-01	2.0306E-01
-1.03	1.7976E-01	1.8452E-01	1.5671E-01	1.5866E-01	1.9814E-01	2.0743E-01
-1.02	1.8407E-01	1.8907E-01	1.6120E-01	1.6327E-01	2.0218E-01	2.1186E-01
-1.01	1.8844E-01	1.9369E-01	1.6577E-01	1.6796E-01	2.0626E-01	2.1634E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
-1.00	1.9207E-01	1.9837E-01	1.7042E-01	1.7274E-01	2.1037E-01	2.2088E-01
-0.99	1.9735E-01	2.0313E-01	1.7514E-01	1.7761E-01	2.1453E-01	2.2548E-01
-0.98	2.0189E-01	2.0795E-01	1.7995E-01	1.8256E-01	2.1873E-01	2.3012E-01
-0.97	2.0648E-01	2.1284E-01	1.8483E-01	1.8760E-01	2.2296E-01	2.3482E-01
-0.96	2.1113E-01	2.1780E-01	1.8979E-01	1.9272E-01	2.2723E-01	2.3957E-01
-0.95	2.1583E-01	2.2282E-01	1.9482E-01	1.9793E-01	2.3153E-01	2.4438E-01
-0.94	2.2058E-01	2.2791E-01	1.9993E-01	2.0322E-01	2.3586E-01	2.4923E-01
-0.93	2.2538E-01	2.3306E-01	2.0511E-01	2.0860E-01	2.4023E-01	2.5414E-01
-0.92	2.3023E-01	2.3828E-01	2.1036E-01	2.1405E-01	2.4464E-01	2.5909E-01
-0.91	2.3513E-01	2.4356E-01	2.1569E-01	2.1959E-01	2.4907E-01	2.6410E-01
-0.90	2.4008E-01	2.4890E-01	2.2109E-01	2.2521E-01	2.5353E-01	2.6916E-01
-0.89	2.4507E-01	2.5431E-01	2.2655E-01	2.3092E-01	2.5802E-01	2.7426E-01
-0.88	2.5010E-01	2.5977E-01	2.3209E-01	2.3670E-01	2.6253E-01	2.7941E-01
-0.87	2.5518E-01	2.6530E-01	2.3769E-01	2.4256E-01	2.6708E-01	2.8460E-01
-0.86	2.6030E-01	2.7088E-01	2.4335E-01	2.4850E-01	2.7164E-01	2.8985E-01
-0.85	2.6546E-01	2.7652E-01	2.4908E-01	2.5451E-01	2.7623E-01	2.9513E-01
-0.84	2.7065E-01	2.8222E-01	2.5487E-01	2.6060E-01	2.8084E-01	3.0047E-01
-0.83	2.7598E-01	2.8798E-01	2.6072E-01	2.6677E-01	2.8547E-01	3.0584E-01
-0.82	2.8115E-01	2.9379E-01	2.6663E-01	2.7300E-01	2.9012E-01	3.1126E-01
-0.81	2.8645E-01	2.9965E-01	2.7259E-01	2.7931E-01	2.9478E-01	3.1671E-01
-0.80	2.9178E-01	3.0557E-01	2.7840E-01	2.8569E-01	2.9946E-01	3.2221E-01
-0.79	2.9714E-01	3.1153E-01	2.8467E-01	2.9214E-01	3.0415E-01	3.2775E-01
-0.78	3.0253E-01	3.1755E-01	2.9079E-01	2.9865E-01	3.0886E-01	3.3332E-01
-0.77	3.0794E-01	3.2362E-01	2.9695E-01	3.0523E-01	3.1358E-01	3.3894E-01
-0.76	3.1337E-01	3.2973E-01	3.0315E-01	3.1187E-01	3.1830E-01	3.4458E-01
-0.75	3.1883E-01	3.3589E-01	3.0940E-01	3.1858E-01	3.2303E-01	3.5027E-01
-0.74	3.2430E-01	3.4209E-01	3.1569E-01	3.2534E-01	3.2777E-01	3.5598E-01
-0.73	3.2979E-01	3.4834E-01	3.2201E-01	3.3216E-01	3.3251E-01	3.6173E-01
-0.72	3.3529E-01	3.5462E-01	3.2837E-01	3.3904E-01	3.3725E-01	3.6751E-01
-0.71	3.4081E-01	3.6095E-01	3.3476E-01	3.4598E-01	3.4199E-01	3.7332E-01
-0.70	3.4634E-01	3.6732E-01	3.4118E-01	3.5296E-01	3.4673E-01	3.7916E-01
-0.69	3.5187E-01	3.7372E-01	3.4762E-01	3.6000E-01	3.5146E-01	3.8503E-01
-0.68	3.5741E-01	3.8016E-01	3.5408E-01	3.6708E-01	3.5619E-01	3.9093E-01
-0.67	3.6295E-01	3.8663E-01	3.6057E-01	3.7421E-01	3.6091E-01	3.9684E-01
-0.66	3.6849E-01	3.9313E-01	3.6707E-01	3.8138E-01	3.6562E-01	4.0279E-01
-0.65	3.7402E-01	3.9966E-01	3.7358E-01	3.8859E-01	3.7032E-01	4.0875E-01
-0.64	3.7955E-01	4.0622E-01	3.8010E-01	3.9584E-01	3.7501E-01	4.1474E-01
-0.63	3.8508E-01	4.1281E-01	3.8662E-01	4.0313E-01	3.7968E-01	4.2075E-01
-0.62	3.9059E-01	4.1942E-01	3.9315E-01	4.1045E-01	3.8433E-01	4.2677E-01
-0.61	3.9609E-01	4.2606E-01	3.9968E-01	4.1780E-01	3.8897E-01	4.3281E-01
-0.60	4.0158E-01	4.3271E-01	4.0621E-01	4.2518E-01	3.9358E-01	4.3887E-01
-0.59	4.0704E-01	4.3939E-01	4.1272E-01	4.3259E-01	3.9816E-01	4.4494E-01
-0.58	4.1249E-01	4.4608E-01	4.1923E-01	4.4002E-01	4.0272E-01	4.5103E-01
-0.57	4.1791E-01	4.5279E-01	4.2572E-01	4.4747E-01	4.0726E-01	4.5713E-01
-0.56	4.2331E-01	4.5951E-01	4.3219E-01	4.5494E-01	4.1176E-01	4.6323E-01
-0.55	4.2867E-01	4.6624E-01	4.3864E-01	4.6243E-01	4.1623E-01	4.6935E-01
-0.54	4.3400E-01	4.7298E-01	4.4506E-01	4.6993E-01	4.2067E-01	4.7547E-01
-0.53	4.3930E-01	4.7973E-01	4.5145E-01	4.7744E-01	4.2507E-01	4.8160E-01
-0.52	4.4456E-01	4.8649E-01	4.5781E-01	4.8496E-01	4.2943E-01	4.8773E-01
-0.51	4.4978E-01	4.9325E-01	4.6413E-01	4.9248E-01	4.3376E-01	4.9387E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
-0.50	4.5496E-01	5.0001E-01	4.7041E-01	5.0001E-01	4.3804E-01	5.0001E-01
-0.49	4.6009E-01	5.0677E-01	4.7665E-01	5.0753E-01	4.4227E-01	5.0614E-01
-0.48	4.6517E-01	5.1353E-01	4.8283E-01	5.1506E-01	4.4646E-01	5.1228E-01
-0.47	4.7020E-01	5.2028E-01	4.8896E-01	5.2258E-01	4.5060E-01	5.1841E-01
-0.46	4.7518E-01	5.2703E-01	4.9504E-01	5.3009E-01	4.5469E-01	5.2454E-01
-0.45	4.8009E-01	5.3377E-01	5.0106E-01	5.3759E-01	4.5873E-01	5.3066E-01
-0.44	4.8495E-01	5.4051E-01	5.0701E-01	5.4507E-01	4.6271E-01	5.3678E-01
-0.43	4.8974E-01	5.4723E-01	5.1289E-01	5.5255E-01	4.6664E-01	5.4289E-01
-0.42	4.9447E-01	5.5394E-01	5.1870E-01	5.6000E-01	4.7050E-01	5.4898E-01
-0.41	4.9913E-01	5.6063E-01	5.2444E-01	5.6743E-01	4.7431E-01	5.5507E-01
-0.40	5.0372E-01	5.6730E-01	5.3009E-01	5.7484E-01	4.7805E-01	5.6114E-01
-0.39	5.0824E-01	5.7396E-01	5.3566E-01	5.8222E-01	4.8173E-01	5.6720E-01
-0.38	5.1268E-01	5.8059E-01	5.4115E-01	5.8957E-01	4.8535E-01	5.7324E-01
-0.37	5.1704E-01	5.8720E-01	5.4654E-01	5.9689E-01	4.8889E-01	5.7927E-01
-0.36	5.2132E-01	5.9379E-01	5.5184E-01	6.0418E-01	4.9236E-01	5.8527E-01
-0.35	5.2551E-01	6.0035E-01	5.5704E-01	6.1143E-01	4.9577E-01	5.9126E-01
-0.34	5.2962E-01	6.0688E-01	5.6214E-01	6.1864E-01	4.9910E-01	5.9722E-01
-0.33	5.3364E-01	6.1338E-01	5.6714E-01	6.2581E-01	5.0235E-01	6.0317E-01
-0.32	5.3756E-01	6.1986E-01	5.7202E-01	6.3294E-01	5.0553E-01	6.0909E-01
-0.31	5.4140E-01	6.2629E-01	5.7680E-01	6.4002E-01	5.0862E-01	6.1498E-01
-0.30	5.4513E-01	6.3269E-01	5.8146E-01	6.4705E-01	5.1164E-01	6.2085E-01
-0.29	5.4877E-01	6.3906E-01	5.8600E-01	6.5404E-01	5.1457E-01	6.2669E-01
-0.28	5.5231E-01	6.4539E-01	5.9042E-01	6.6097E-01	5.1743E-01	6.3250E-01
-0.27	5.5574E-01	6.5168E-01	5.9471E-01	6.6785E-01	5.2019E-01	6.3828E-01
-0.26	5.5907E-01	6.5792E-01	5.9888E-01	6.7467E-01	5.2287E-01	6.4403E-01
-0.25	5.6229E-01	6.6412E-01	6.0291E-01	6.8144E-01	5.2546E-01	6.4974E-01
-0.24	5.6540E-01	6.7028E-01	6.0681E-01	6.8814E-01	5.2796E-01	6.5543E-01
-0.23	5.6840E-01	6.7640E-01	6.1058E-01	6.9478E-01	5.3037E-01	6.6108E-01
-0.22	5.7129E-01	6.8246E-01	6.1420E-01	7.0136E-01	5.3269E-01	6.6669E-01
-0.21	5.7406E-01	6.8848E-01	6.1769E-01	7.0788E-01	5.3491E-01	6.7226E-01
-0.20	5.7672E-01	6.9445E-01	6.2103E-01	7.1432E-01	5.3704E-01	6.7780E-01
-0.19	5.7926E-01	7.0036E-01	6.2422E-01	7.2070E-01	5.3907E-01	6.8330E-01
-0.18	5.8167E-01	7.0622E-01	6.2726E-01	7.2701E-01	5.4101E-01	6.8875E-01
-0.17	5.8397E-01	7.1203E-01	6.3015E-01	7.3325E-01	5.4284E-01	6.9417E-01
-0.16	5.8614E-01	7.1779E-01	6.3289E-01	7.3941E-01	5.4458E-01	6.9954E-01
-0.15	5.8819E-01	7.2349E-01	6.3548E-01	7.4550E-01	5.4622E-01	7.0488E-01
-0.14	5.9011E-01	7.2913E-01	6.3790E-01	7.5151E-01	5.4775E-01	7.1016E-01
-0.13	5.9190E-01	7.3471E-01	6.4017E-01	7.5745E-01	5.4919E-01	7.1541E-01
-0.12	5.9357E-01	7.4024E-01	6.4227E-01	7.6331E-01	5.5052E-01	7.2060E-01
-0.11	5.9511E-01	7.4570E-01	6.4421E-01	7.6909E-01	5.5174E-01	7.2575E-01
-0.10	5.9652E-01	7.5111E-01	6.4599E-01	7.7480E-01	5.5287E-01	7.3085E-01
-0.09	5.9779E-01	7.5645E-01	6.4760E-01	7.8042E-01	5.5388E-01	7.3591E-01
-0.08	5.9894E-01	7.6173E-01	6.4905E-01	7.8596E-01	5.5480E-01	7.4092E-01
-0.07	5.9995E-01	7.6695E-01	6.5033E-01	7.9141E-01	5.5560E-01	7.4587E-01
-0.06	6.0082E-01	7.7210E-01	6.5144E-01	7.9679E-01	5.5630E-01	7.5078E-01
-0.05	6.0157E-01	7.7719E-01	6.5238E-01	8.0208E-01	5.5690E-01	7.5563E-01
-0.04	6.0218E-01	7.8221E-01	6.5315E-01	8.0729E-01	5.5738E-01	7.6044E-01
-0.03	6.0265E-01	7.8717E-01	6.5375E-01	8.1241E-01	5.5776E-01	7.6519E-01
-0.02	6.0299E-01	7.9206E-01	6.5418E-01	8.1745E-01	5.5803E-01	7.6989E-01
-0.01	6.0319E-01	7.9688E-01	6.5444E-01	8.2240E-01	5.5819E-01	7.7453E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59 FRACTION OF CHAIN		SIGMA= 0.53 FRACTION OF CHAIN		SIGMA= 0.65 FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
0.00	6.0326E-01	8.0163E-01	6.5452E-01	8.2727E-01	5.5824E-01	7.7913E-01
0.01	6.0319E-01	8.0632E-01	6.5444E-01	8.3205E-01	5.5819E-01	7.8366E-01
0.02	6.0299E-01	8.1094E-01	6.5418E-01	8.3674E-01	5.5803E-01	7.8815E-01
0.03	6.0265E-01	8.1549E-01	6.5375E-01	8.4135E-01	5.5776E-01	7.9258E-01
0.04	6.0218E-01	8.1998E-01	6.5315E-01	8.4587E-01	5.5738E-01	7.9695E-01
0.05	6.0157E-01	8.2439E-01	6.5238E-01	8.5031E-01	5.5689E-01	8.0127E-01
0.06	6.0082E-01	8.2873E-01	6.5144E-01	8.5466E-01	5.5630E-01	8.0553E-01
0.07	5.9994E-01	8.3301E-01	6.5033E-01	8.5892E-01	5.5560E-01	8.0974E-01
0.08	5.9893E-01	8.3721E-01	6.4905E-01	8.6310E-01	5.5480E-01	8.1389E-01
0.09	5.9779E-01	8.4135E-01	6.4760E-01	8.6719E-01	5.5388E-01	8.1798E-01
0.10	5.9651E-01	8.4542E-01	6.4599E-01	8.7120E-01	5.5287E-01	8.2202E-01
0.11	5.9511E-01	8.4941E-01	6.4421E-01	8.7513E-01	5.5174E-01	8.2600E-01
0.12	5.9357E-01	8.5334E-01	6.4227E-01	8.7897E-01	5.5051E-01	8.2992E-01
0.13	5.9190E-01	8.5720E-01	6.4016E-01	8.8272E-01	5.4918E-01	8.3379E-01
0.14	5.9011E-01	8.6099E-01	6.3790E-01	8.8639E-01	5.4775E-01	8.3760E-01
0.15	5.8818E-01	8.6471E-01	6.3547E-01	8.8998E-01	5.4621E-01	8.4135E-01
0.16	5.8614E-01	8.6836E-01	6.3289E-01	8.9349E-01	5.4458E-01	8.4504E-01
0.17	5.8396E-01	8.7194E-01	6.3015E-01	8.9692E-01	5.4284E-01	8.4868E-01
0.18	5.8167E-01	8.7545E-01	6.2726E-01	9.0026E-01	5.4100E-01	8.5226E-01
0.19	5.7925E-01	8.7890E-01	6.2421E-01	9.0353E-01	5.3907E-01	8.5578E-01
0.20	5.7671E-01	8.8228E-01	6.2102E-01	9.0671E-01	5.3703E-01	8.5925E-01
0.21	5.7406E-01	8.8559E-01	6.1768E-01	9.0982E-01	5.3491E-01	8.6265E-01
0.22	5.7128E-01	8.8883E-01	6.1420E-01	9.1285E-01	5.3268E-01	8.6601E-01
0.23	5.6840E-01	8.9201E-01	6.1057E-01	9.1580E-01	5.3036E-01	8.6930E-01
0.24	5.6540E-01	8.9513E-01	6.0681E-01	9.1868E-01	5.2796E-01	8.7254E-01
0.25	5.6228E-01	8.9817E-01	6.0290E-01	9.2148E-01	5.2545E-01	8.7572E-01
0.26	5.5906E-01	9.0115E-01	5.9887E-01	9.2421E-01	5.2286E-01	8.7885E-01
0.27	5.5573E-01	9.0407E-01	5.9470E-01	9.2687E-01	5.2019E-01	8.8192E-01
0.28	5.5230E-01	9.0692E-01	5.9041E-01	9.2945E-01	5.1742E-01	8.8493E-01
0.29	5.4876E-01	9.0971E-01	5.8599E-01	9.3196E-01	5.1457E-01	8.8789E-01
0.30	5.4512E-01	9.1244E-01	5.8145E-01	9.3441E-01	5.1163E-01	8.9080E-01
0.31	5.4139E-01	9.1511E-01	5.7679E-01	9.3678E-01	5.0862E-01	8.9365E-01
0.32	5.3756E-01	9.1771E-01	5.7201E-01	9.3909E-01	5.0552E-01	8.9645E-01
0.33	5.3363E-01	9.2026E-01	5.6713E-01	9.4133E-01	5.0234E-01	8.9919E-01
0.34	5.2961E-01	9.2274E-01	5.6213E-01	9.4351E-01	4.9909E-01	9.0188E-01
0.35	5.2550E-01	9.2516E-01	5.5703E-01	9.4562E-01	4.9576E-01	9.0451E-01
0.36	5.2131E-01	9.2753E-01	5.5183E-01	9.4767E-01	4.9236E-01	9.0710E-01
0.37	5.1703E-01	9.2984E-01	5.4653E-01	9.4966E-01	4.8888E-01	9.0963E-01
0.38	5.1267E-01	9.3209E-01	5.4114E-01	9.5158E-01	4.8534E-01	9.1211E-01
0.39	5.0823E-01	9.3429E-01	5.3565E-01	9.5345E-01	4.8173E-01	9.1454E-01
0.40	5.0371E-01	9.3643E-01	5.3008E-01	9.5526E-01	4.7805E-01	9.1692E-01
0.41	4.9912E-01	9.3851E-01	5.2442E-01	9.5701E-01	4.7430E-01	9.1925E-01
0.42	4.9446E-01	9.4054E-01	5.1869E-01	9.5871E-01	4.7050E-01	9.2152E-01
0.43	4.8974E-01	9.4252E-01	5.1288E-01	9.6035E-01	4.6663E-01	9.2375E-01
0.44	4.8494E-01	9.4445E-01	5.0700E-01	9.6194E-01	4.6270E-01	9.2594E-01
0.45	4.8008E-01	9.4632E-01	5.0104E-01	9.6347E-01	4.5872E-01	9.2807E-01
0.46	4.7517E-01	9.4815E-01	4.9503E-01	9.6496E-01	4.5468E-01	9.3015E-01
0.47	4.7019E-01	9.4992E-01	4.8895E-01	9.6639E-01	4.5059E-01	9.3219E-01
0.48	4.6516E-01	9.5165E-01	4.8282E-01	9.6778E-01	4.4645E-01	9.3419E-01
0.49	4.6008E-01	9.5332E-01	4.7663E-01	9.6912E-01	4.4226E-01	9.3613E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN		FRACTION OF CHAIN		FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
0.50	4.5495E-01	9.5496E-01	4.7040E-01	9.7041E-01	4.3803E-01	9.3803E-01
0.51	4.4977E-01	9.5654E-01	4.6412E-01	9.7165E-01	4.3375E-01	9.3989E-01
0.52	4.4455E-01	9.5808E-01	4.5780E-01	9.7286E-01	4.2943E-01	9.4170E-01
0.53	4.3929E-01	9.5958E-01	4.5144E-01	9.7402E-01	4.2506E-01	9.4347E-01
0.54	4.3399E-01	9.6103E-01	4.4505E-01	9.7514E-01	4.2066E-01	9.4520E-01
0.55	4.2866E-01	9.6244E-01	4.3863E-01	9.7621E-01	4.1622E-01	9.4689E-01
0.56	4.2330E-01	9.6380E-01	4.3218E-01	9.7725E-01	4.1175E-01	9.4853E-01
0.57	4.1790E-01	9.6513E-01	4.2571E-01	9.7825E-01	4.0725E-01	9.5014E-01
0.58	4.1248E-01	9.6641E-01	4.1922E-01	9.7921E-01	4.0272E-01	9.5170E-01
0.59	4.0703E-01	9.6766E-01	4.1271E-01	9.8014E-01	3.9815E-01	9.5322E-01
0.60	4.0157E-01	9.6887E-01	4.0619E-01	9.8103E-01	3.9357E-01	9.5471E-01
0.61	3.9608E-01	9.7004E-01	3.9967E-01	9.8189E-01	3.8896E-01	9.5615E-01
0.62	3.9058E-01	9.7117E-01	3.9314E-01	9.8271E-01	3.8432E-01	9.5756E-01
0.63	3.8507E-01	9.7227E-01	3.8661E-01	9.8350E-01	3.7967E-01	9.5894E-01
0.64	3.7954E-01	9.7333E-01	3.8009E-01	9.8426E-01	3.7500E-01	9.6027E-01
0.65	3.7401E-01	9.7436E-01	3.7356E-01	9.8499E-01	3.7031E-01	9.6157E-01
0.66	3.6848E-01	9.7536E-01	3.6705E-01	9.8569E-01	3.6562E-01	9.6284E-01
0.67	3.6294E-01	9.7632E-01	3.6055E-01	9.8636E-01	3.6090E-01	9.6407E-01
0.68	3.5740E-01	9.7725E-01	3.5407E-01	9.8701E-01	3.5618E-01	9.6527E-01
0.69	3.5186E-01	9.7815E-01	3.4761E-01	9.8763E-01	3.5145E-01	9.6643E-01
0.70	3.4633E-01	9.7902E-01	3.4116E-01	9.8822E-01	3.4672E-01	9.6757E-01
0.71	3.4080E-01	9.7986E-01	3.3475E-01	9.8879E-01	3.4198E-01	9.6867E-01
0.72	3.3528E-01	9.8067E-01	3.2836E-01	9.8933E-01	3.3724E-01	9.6974E-01
0.73	3.2978E-01	9.8145E-01	3.2200E-01	9.8985E-01	3.3250E-01	9.7078E-01
0.74	3.2429E-01	9.8221E-01	3.1568E-01	9.9035E-01	3.2776E-01	9.7179E-01
0.75	3.1882E-01	9.8294E-01	3.0939E-01	9.9083E-01	3.2302E-01	9.7277E-01
0.76	3.1336E-01	9.8364E-01	3.0314E-01	9.9128E-01	3.1829E-01	9.7372E-01
0.77	3.0793E-01	9.8432E-01	2.9694E-01	9.9172E-01	3.1357E-01	9.7464E-01
0.78	3.0252E-01	9.8498E-01	2.9077E-01	9.9213E-01	3.0885E-01	9.7554E-01
0.79	2.9713E-01	9.8561E-01	2.8466E-01	9.9253E-01	3.0414E-01	9.7641E-01
0.80	2.9177E-01	9.8622E-01	2.7859E-01	9.9291E-01	2.9945E-01	9.7725E-01
0.81	2.8644E-01	9.8680E-01	2.7258E-01	9.9328E-01	2.9477E-01	9.7807E-01
0.82	2.8114E-01	9.8737E-01	2.6661E-01	9.9362E-01	2.9011E-01	9.7886E-01
0.83	2.7588E-01	9.8791E-01	2.6071E-01	9.9395E-01	2.8546E-01	9.7963E-01
0.84	2.7064E-01	9.8843E-01	2.5486E-01	9.9427E-01	2.8083E-01	9.8037E-01
0.85	2.6545E-01	9.8894E-01	2.4907E-01	9.9457E-01	2.7622E-01	9.8110E-01
0.86	2.6029E-01	9.8942E-01	2.4334E-01	9.9486E-01	2.7163E-01	9.8180E-01
0.87	2.5517E-01	9.8988E-01	2.3768E-01	9.9513E-01	2.6707E-01	9.8247E-01
0.88	2.5009E-01	9.9033E-01	2.3208E-01	9.9539E-01	2.6253E-01	9.8313E-01
0.89	2.4506E-01	9.9076E-01	2.2654E-01	9.9564E-01	2.5801E-01	9.8376E-01
0.90	2.4007E-01	9.9118E-01	2.2108E-01	9.9587E-01	2.5352E-01	9.8437E-01
0.91	2.3512E-01	9.9157E-01	2.1568E-01	9.9610E-01	2.4906E-01	9.8497E-01
0.92	2.3022E-01	9.9195E-01	2.1035E-01	9.9631E-01	2.4463E-01	9.8554E-01
0.93	2.2537E-01	9.9232E-01	2.0510E-01	9.9651E-01	2.4023E-01	9.8611E-01
0.94	2.2057E-01	9.9267E-01	1.9992E-01	9.9671E-01	2.3586E-01	9.8663E-01
0.95	2.1582E-01	9.9301E-01	1.9481E-01	9.9689E-01	2.3152E-01	9.8715E-01
0.96	2.1112E-01	9.9333E-01	1.8978E-01	9.9706E-01	2.2722E-01	9.8765E-01
0.97	2.0647E-01	9.9364E-01	1.8482E-01	9.9723E-01	2.2295E-01	9.8814E-01
0.98	2.0188E-01	9.9394E-01	1.7994E-01	9.9738E-01	2.1872E-01	9.8861E-01
0.99	1.9734E-01	9.9422E-01	1.7513E-01	9.9753E-01	2.1452E-01	9.8906E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59 FRACTION OF CHAIN		SIGMA= 0.53 FRACTION OF CHAIN		SIGMA= 0.65 FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
1.00	1.9286E-01	9.9450E-01	1.7041E-01	9.9767E-01	2.1037E-01	9.8949E-01
1.01	1.8843E-01	9.9476E-01	1.6576E-01	9.9781E-01	2.0625E-01	9.8991E-01
1.02	1.8406E-01	9.9501E-01	1.6119E-01	9.9793E-01	2.0217E-01	9.9032E-01
1.03	1.7975E-01	9.9525E-01	1.5670E-01	9.9805E-01	1.9813E-01	9.9071E-01
1.04	1.7550E-01	9.9548E-01	1.5230E-01	9.9817E-01	1.9414E-01	9.9109E-01
1.05	1.7131E-01	9.9569E-01	1.4797E-01	9.9828E-01	1.9018E-01	9.9145E-01
1.06	1.6717E-01	9.9590E-01	1.4372E-01	9.9838E-01	1.8627E-01	9.9180E-01
1.07	1.6310E-01	9.9610E-01	1.3955E-01	9.9847E-01	1.8240E-01	9.9214E-01
1.08	1.5908E-01	9.9630E-01	1.3546E-01	9.9856E-01	1.7858E-01	9.9247E-01
1.09	1.5513E-01	9.9648E-01	1.3146E-01	9.9865E-01	1.7480E-01	9.9278E-01
1.10	1.5124E-01	9.9665E-01	1.2753E-01	9.9873E-01	1.7106E-01	9.9308E-01
1.11	1.4741E-01	9.9682E-01	1.2368E-01	9.9881E-01	1.6737E-01	9.9337E-01
1.12	1.4364E-01	9.9698E-01	1.1992E-01	9.9888E-01	1.6373E-01	9.9365E-01
1.13	1.3994E-01	9.9713E-01	1.1623E-01	9.9895E-01	1.6014E-01	9.9392E-01
1.14	1.3629E-01	9.9728E-01	1.1262E-01	9.9901E-01	1.5659E-01	9.9418E-01
1.15	1.3271E-01	9.9742E-01	1.0909E-01	9.9907E-01	1.5308E-01	9.9443E-01
1.16	1.2919E-01	9.9755E-01	1.0564E-01	9.9913E-01	1.4963E-01	9.9467E-01
1.17	1.2574E-01	9.9768E-01	1.0227E-01	9.9919E-01	1.4623E-01	9.9490E-01
1.18	1.2234E-01	9.9780E-01	9.8977E-02	9.9924E-01	1.4287E-01	9.9513E-01
1.19	1.1901E-01	9.9791E-01	9.5760E-02	9.9929E-01	1.3956E-01	9.9534E-01
1.20	1.1574E-01	9.9802E-01	9.2619E-02	9.9933E-01	1.3630E-01	9.9554E-01
1.21	1.1253E-01	9.9812E-01	8.9554E-02	9.9937E-01	1.3309E-01	9.9574E-01
1.22	1.0939E-01	9.9822E-01	8.6565E-02	9.9941E-01	1.2992E-01	9.9593E-01
1.23	1.0630E-01	9.9832E-01	8.3649E-02	9.9945E-01	1.2681E-01	9.9611E-01
1.24	1.0328E-01	9.9841E-01	8.0807E-02	9.9949E-01	1.2375E-01	9.9629E-01
1.25	1.0032E-01	9.9849E-01	7.8038E-02	9.9952E-01	1.2073E-01	9.9645E-01
1.26	9.7420E-02	9.9857E-01	7.5340E-02	9.9955E-01	1.1776E-01	9.9661E-01
1.27	9.4579E-02	9.9865E-01	7.2714E-02	9.9958E-01	1.1485E-01	9.9677E-01
1.28	9.1799E-02	9.9872E-01	7.0157E-02	9.9961E-01	1.1198E-01	9.9691E-01
1.29	8.9078E-02	9.9879E-01	6.7669E-02	9.9963E-01	1.0916E-01	9.9706E-01
1.30	8.6417E-02	9.9886E-01	6.5250E-02	9.9966E-01	1.0639E-01	9.9719E-01
1.31	8.3814E-02	9.9892E-01	6.2898E-02	9.9968E-01	1.0367E-01	9.9732E-01
1.32	8.1269E-02	9.9898E-01	6.0612E-02	9.9970E-01	1.0100E-01	9.9744E-01
1.33	7.8782E-02	9.9904E-01	5.8390E-02	9.9972E-01	9.8376E-02	9.9756E-01
1.34	7.6352E-02	9.9909E-01	5.6233E-02	9.9974E-01	9.5801E-02	9.9768E-01
1.35	7.3978E-02	9.9914E-01	5.4139E-02	9.9976E-01	9.3274E-02	9.9779E-01
1.36	7.1660E-02	9.9919E-01	5.2107E-02	9.9978E-01	9.0795E-02	9.9789E-01
1.37	6.9398E-02	9.9924E-01	5.0135E-02	9.9979E-01	8.8363E-02	9.9799E-01
1.38	6.7190E-02	9.9928E-01	4.8223E-02	9.9981E-01	8.5978E-02	9.9809E-01
1.39	6.5035E-02	9.9932E-01	4.6369E-02	9.9982E-01	8.3641E-02	9.9818E-01
1.40	6.2935E-02	9.9936E-01	4.4573E-02	9.9983E-01	8.1350E-02	9.9827E-01
1.41	6.0886E-02	9.9940E-01	4.2833E-02	9.9984E-01	7.9105E-02	9.9835E-01
1.42	5.8890E-02	9.9943E-01	4.1148E-02	9.9985E-01	7.6907E-02	9.9843E-01
1.43	5.6944E-02	9.9946E-01	3.9517E-02	9.9986E-01	7.4753E-02	9.9851E-01
1.44	5.5049E-02	9.9950E-01	3.7938E-02	9.9987E-01	7.2645E-02	9.9858E-01
1.45	5.3204E-02	9.9953E-01	3.6412E-02	9.9988E-01	7.0582E-02	9.9865E-01
1.46	5.1407E-02	9.9955E-01	3.4936E-02	9.9989E-01	6.8563E-02	9.9872E-01
1.47	4.9659E-02	9.9958E-01	3.3509E-02	9.9990E-01	6.6588E-02	9.9878E-01
1.48	4.7958E-02	9.9960E-01	3.2130E-02	9.9991E-01	6.4656E-02	9.9884E-01
1.49	4.6303E-02	9.9963E-01	3.0798E-02	9.9991E-01	6.2767E-02	9.9890E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-ZIP)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
1.50	4.4695E-02	9.9965E-01	2.9512E-02	9.9992E-01	6.0920E-02	9.9895E-01
1.51	4.3131E-02	9.9967E-01	2.8271E-02	9.9993E-01	5.9116E-02	9.9901E-01
1.52	4.1611E-02	9.9969E-01	2.7074E-02	9.9993E-01	5.7353E-02	9.9906E-01
1.53	4.0135E-02	9.9971E-01	2.5919E-02	9.9994E-01	5.5630E-02	9.9911E-01
1.54	3.8701E-02	9.9973E-01	2.4805E-02	9.9994E-01	5.3949E-02	9.9915E-01
1.55	3.7309E-02	9.9974E-01	2.3732E-02	9.9995E-01	5.2306E-02	9.9919E-01
1.56	3.5957E-02	9.9976E-01	2.2698E-02	9.9995E-01	5.0704E-02	9.9924E-01
1.57	3.4646E-02	9.9977E-01	2.1703E-02	9.9995E-01	4.9140E-02	9.9928E-01
1.58	3.3374E-02	9.9979E-01	2.0744E-02	9.9996E-01	4.7614E-02	9.9931E-01
1.59	3.2141E-02	9.9980E-01	1.9821E-02	9.9996E-01	4.6126E-02	9.9935E-01
1.60	3.0945E-02	9.9981E-01	1.8933E-02	9.9996E-01	4.4675E-02	9.9938E-01
1.61	2.9786E-02	9.9983E-01	1.8080E-02	9.9997E-01	4.3260E-02	9.9942E-01
1.62	2.8664E-02	9.9984E-01	1.7259E-02	9.9997E-01	4.1882E-02	9.9945E-01
1.63	2.7576E-02	9.9985E-01	1.6470E-02	9.9997E-01	4.0539E-02	9.9948E-01
1.64	2.6523E-02	9.9986E-01	1.5713E-02	9.9997E-01	3.9230E-02	9.9950E-01
1.65	2.5503E-02	9.9987E-01	1.4985E-02	9.9998E-01	3.7956E-02	9.9953E-01
1.66	2.4517E-02	9.9987E-01	1.4286E-02	9.9998E-01	3.6715E-02	9.9955E-01
1.67	2.3562E-02	9.9988E-01	1.3616E-02	9.9998E-01	3.5508E-02	9.9958E-01
1.68	2.2639E-02	9.9989E-01	1.2973E-02	9.9998E-01	3.4333E-02	9.9960E-01
1.69	2.1747E-02	9.9990E-01	1.2356E-02	9.9998E-01	3.3189E-02	9.9962E-01
1.70	2.0884E-02	9.9990E-01	1.1765E-02	9.9998E-01	3.2077E-02	9.9964E-01
1.71	2.0050E-02	9.9991E-01	1.1199E-02	9.9998E-01	3.0996E-02	9.9966E-01
1.72	1.9245E-02	9.9992E-01	1.0656E-02	9.9999E-01	2.9945E-02	9.9968E-01
1.73	1.8467E-02	9.9992E-01	1.0137E-02	9.9999E-01	2.8923E-02	9.9970E-01
1.74	1.7716E-02	9.9993E-01	9.6393E-03	9.9999E-01	2.7930E-02	9.9972E-01
1.75	1.6991E-02	9.9993E-01	9.1634E-03	9.9999E-01	2.6966E-02	9.9973E-01
1.76	1.6292E-02	9.9994E-01	8.7081E-03	9.9999E-01	2.6029E-02	9.9975E-01
1.77	1.5617E-02	9.9994E-01	8.2728E-03	9.9999E-01	2.5119E-02	9.9976E-01
1.78	1.4966E-02	9.9994E-01	7.8567E-03	9.9999E-01	2.4236E-02	9.9977E-01
1.79	1.4339E-02	9.9995E-01	7.4591E-03	9.9999E-01	2.3379E-02	9.9979E-01
1.80	1.3735E-02	9.9995E-01	7.0794E-03	9.9999E-01	2.2548E-02	9.9980E-01
1.81	1.3152E-02	9.9995E-01	6.7168E-03	9.9999E-01	2.1742E-02	9.9981E-01
1.82	1.2591E-02	9.9996E-01	6.3707E-03	9.9999E-01	2.0959E-02	9.9982E-01
1.83	1.2051E-02	9.9996E-01	6.0405E-03	1.0000E 00	2.0201E-02	9.9983E-01
1.84	1.1531E-02	9.9996E-01	5.7255E-03	1.0000E 00	1.9466E-02	9.9984E-01
1.85	1.1030E-02	9.9997E-01	5.4252E-03	1.0000E 00	1.8754E-02	9.9985E-01
1.86	1.0549E-02	9.9997E-01	5.1389E-03	1.0000E 00	1.8064E-02	9.9986E-01
1.87	1.0086E-02	9.9997E-01	4.8662E-03	1.0000E 00	1.7395E-02	9.9987E-01
1.88	9.6403E-03	9.9997E-01	4.6064E-03	1.0000E 00	1.6748E-02	9.9987E-01
1.89	9.2122E-03	9.9997E-01	4.3591E-03	1.0000E 00	1.6121E-02	9.9988E-01
1.90	8.8009E-03	9.9998E-01	4.1237E-03	1.0000E 00	1.5514E-02	9.9989E-01
1.91	8.4056E-03	9.9998E-01	3.8998E-03	1.0000E 00	1.4927E-02	9.9990E-01
1.92	8.0261E-03	9.9998E-01	3.6868E-03	1.0000E 00	1.4360E-02	9.9990E-01
1.93	7.6617E-03	9.9998E-01	3.4843E-03	1.0000E 00	1.3810E-02	9.9991E-01
1.94	7.3118E-03	9.9998E-01	3.2918E-03	1.0000E 00	1.3279E-02	9.9991E-01
1.95	6.9762E-03	9.9998E-01	3.1090E-03	1.0000E 00	1.2766E-02	9.9992E-01
1.96	6.6542E-03	9.9998E-01	2.9353E-03	1.0000E 00	1.2270E-02	9.9992E-01
1.97	6.3454E-03	9.9999E-01	2.7705E-03	1.0000E 00	1.1790E-02	9.9993E-01
1.98	6.0493E-03	9.9999E-01	2.6140E-03	1.0000E 00	1.1327E-02	9.9993E-01
1.99	5.7655E-03	9.9999E-01	2.4655E-03	1.0000E 00	1.0880E-02	9.9994E-01

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
2.00	5.4936E-03	9.9999E-01	2.3248E-03	1.0000E 00	1.0448E-02	9.9994E-01
2.01	5.2331E-03	9.9999E-01	2.1913E-03	1.0000E 00	1.0031E-02	9.9994E-01
2.02	4.9837E-03	9.9999E-01	2.0648E-03	1.0000E 00	9.6284E-03	9.9995E-01
2.03	4.7449E-03	9.9999E-01	1.9450E-03	1.0000E 00	9.2401E-03	9.9995E-01
2.04	4.5164E-03	9.9999E-01	1.8315E-03	1.0000E 00	8.8656E-03	9.9995E-01
2.05	4.2977E-03	9.9999E-01	1.7241E-03	1.0000E 00	8.5044E-03	9.9996E-01
2.06	4.0885E-03	9.9999E-01	1.6225E-03	1.0000E 00	8.1562E-03	9.9996E-01
2.07	3.8885E-03	9.9999E-01	1.5263E-03	1.0000E 00	7.8205E-03	9.9996E-01
2.08	3.6973E-03	9.9999E-01	1.4354E-03	1.0000E 00	7.4971E-03	9.9996E-01
2.09	3.5145E-03	1.0000E 00	1.3494E-03	1.0000E 00	7.1854E-03	9.9997E-01
2.10	3.3400E-03	1.0000E 00	1.2681E-03	1.0000E 00	6.8852E-03	9.9997E-01
2.11	3.1732E-03	1.0000E 00	1.1914E-03	1.0000E 00	6.5961E-03	9.9997E-01
2.12	3.0140E-03	1.0000E 00	1.1189E-03	1.0000E 00	6.3178E-03	9.9997E-01
2.13	2.8619E-03	1.0000E 00	1.0505E-03	1.0000E 00	6.0499E-03	9.9997E-01
2.14	2.7169E-03	1.0000E 00	9.8596E-04	1.0000E 00	5.7921E-03	9.9998E-01
2.15	2.5785E-03	1.0000E 00	9.2506E-04	1.0000E 00	5.5440E-03	9.9998E-01
2.16	2.4465E-03	1.0000E 00	8.6763E-04	1.0000E 00	5.3055E-03	9.9998E-01
2.17	2.3206E-03	1.0000E 00	8.1351E-04	1.0000E 00	5.0761E-03	9.9998E-01
2.18	2.2007E-03	1.0000E 00	7.6250E-04	1.0000E 00	4.8555E-03	9.9998E-01
2.19	2.0864E-03	1.0000E 00	7.1445E-04	1.0000E 00	4.6436E-03	9.9998E-01
2.20	1.9774E-03	1.0000E 00	6.6921E-04	1.0000E 00	4.4399E-03	9.9998E-01
2.21	1.8737E-03	1.0000E 00	6.2663E-04	1.0000E 00	4.2442E-03	9.9998E-01
2.22	1.7750E-03	1.0000E 00	5.8655E-04	1.0000E 00	4.0562E-03	9.9999E-01
2.23	1.6810E-03	1.0000E 00	5.4886E-04	1.0000E 00	3.8758E-03	9.9999E-01
2.24	1.5915E-03	1.0000E 00	5.1342E-04	1.0000E 00	3.7025E-03	9.9999E-01
2.25	1.5064E-03	1.0000E 00	4.8011E-04	1.0000E 00	3.5362E-03	9.9999E-01
2.26	1.4259E-03	1.0000E 00	4.4881E-04	1.0000E 00	3.3767E-03	9.9999E-01
2.27	1.3486E-03	1.0000E 00	4.1941E-04	1.0000E 00	3.2236E-03	9.9999E-01
2.28	1.2754E-03	1.0000E 00	3.9180E-04	1.0000E 00	3.0768E-03	9.9999E-01
2.29	1.2060E-03	1.0000E 00	3.6589E-04	1.0000E 00	2.9361E-03	9.9999E-01
2.30	1.1400E-03	1.0000E 00	3.4158E-04	1.0000E 00	2.8011E-03	9.9999E-01
2.31	1.0773E-03	1.0000E 00	3.1877E-04	1.0000E 00	2.6718E-03	9.9999E-01
2.32	1.0178E-03	1.0000E 00	2.9739E-04	1.0000E 00	2.5479E-03	9.9999E-01
2.33	9.6129E-04	1.0000E 00	2.7735E-04	1.0000E 00	2.4292E-03	9.9999E-01
2.34	9.0771E-04	1.0000E 00	2.5858E-04	1.0000E 00	2.3155E-03	9.9999E-01
2.35	8.5688E-04	1.0000E 00	2.4099E-04	1.0000E 00	2.2067E-03	1.0000E 00
2.36	8.0868E-04	1.0000E 00	2.2453E-04	1.0000E 00	2.1025E-03	1.0000E 00
2.37	7.6298E-04	1.0000E 00	2.0912E-04	1.0000E 00	2.0028E-03	1.0000E 00
2.38	7.1968E-04	1.0000E 00	1.9470E-04	1.0000E 00	1.9074E-03	1.0000E 00
2.39	6.7865E-04	1.0000E 00	1.8121E-04	1.0000E 00	1.8161E-03	1.0000E 00
2.40	6.3978E-04	1.0000E 00	1.6861E-04	1.0000E 00	1.7289E-03	1.0000E 00
2.41	6.0298E-04	1.0000E 00	1.5682E-04	1.0000E 00	1.6454E-03	1.0000E 00
2.42	5.6815E-04	1.0000E 00	1.4581E-04	1.0000E 00	1.5657E-03	1.0000E 00
2.43	5.3518E-04	1.0000E 00	1.3553E-04	1.0000E 00	1.4895E-03	1.0000E 00
2.44	5.0399E-04	1.0000E 00	1.2593E-04	1.0000E 00	1.4166E-03	1.0000E 00
2.45	4.7449E-04	1.0000E 00	1.1697E-04	1.0000E 00	1.3471E-03	1.0000E 00
2.46	4.4659E-04	1.0000E 00	1.0862E-04	1.0000E 00	1.2806E-03	1.0000E 00
2.47	4.2022E-04	1.0000E 00	1.0082E-04	1.0000E 00	1.2172E-03	1.0000E 00
2.48	3.9530E-04	1.0000E 00	9.3554E-05	1.0000E 00	1.1567E-03	1.0000E 00
2.49	3.7176E-04	1.0000E 00	8.6782E-05	1.0000E 00	1.0989E-03	1.0000E 00

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN		FRACTION OF CHAIN		FRACTION OF CHAIN	
	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE	INDEPENDENT	CUMULATIVE
2.50	3.4953E-04	1.0000E 00	8.0472E-05	1.0000E 00	1.0438E-03	1.0000E 00
2.51	3.2854E-04	1.0000E 00	7.4597E-05	1.0000E 00	9.9124E-04	1.0000E 00
2.52	3.0872E-04	1.0000E 00	6.9126E-05	1.0000E 00	9.4111E-04	1.0000E 00
2.53	2.9002E-04	1.0000E 00	6.4036E-05	1.0000E 00	8.9331E-04	1.0000E 00
2.54	2.7238E-04	1.0000E 00	5.9300E-05	1.0000E 00	8.4776E-04	1.0000E 00
2.55	2.5575E-04	1.0000E 00	5.4896E-05	1.0000E 00	8.0435E-04	1.0000E 00
2.56	2.4006E-04	1.0000E 00	5.0801E-05	1.0000E 00	7.6299E-04	1.0000E 00
2.57	2.2528E-04	1.0000E 00	4.6997E-05	1.0000E 00	7.2360E-04	1.0000E 00
2.58	2.1134E-04	1.0000E 00	4.3462E-05	1.0000E 00	6.8609E-04	1.0000E 00
2.59	1.9822E-04	1.0000E 00	4.0180E-05	1.0000E 00	6.5038E-04	1.0000E 00
2.60	1.8586E-04	1.0000E 00	3.7133E-05	1.0000E 00	6.1640E-04	1.0000E 00
2.61	1.7423E-04	1.0000E 00	3.4305E-05	1.0000E 00	5.8406E-04	1.0000E 00
2.62	1.6328E-04	1.0000E 00	3.1682E-05	1.0000E 00	5.5329E-04	1.0000E 00
2.63	1.5297E-04	1.0000E 00	2.9250E-05	1.0000E 00	5.2403E-04	1.0000E 00
2.64	1.4328E-04	1.0000E 00	2.6995E-05	1.0000E 00	4.9620E-04	1.0000E 00
2.65	1.3416E-04	1.0000E 00	2.4905E-05	1.0000E 00	4.6975E-04	1.0000E 00
2.66	1.2559E-04	1.0000E 00	2.2970E-05	1.0000E 00	4.4461E-04	1.0000E 00
2.67	1.1754E-04	1.0000E 00	2.1178E-05	1.0000E 00	4.2072E-04	1.0000E 00
2.68	1.0997E-04	1.0000E 00	1.9518E-05	1.0000E 00	3.9802E-04	1.0000E 00
2.69	1.0286E-04	1.0000E 00	1.7983E-05	1.0000E 00	3.7647E-04	1.0000E 00
2.70	9.6186E-05	1.0000E 00	1.6563E-05	1.0000E 00	3.5600E-04	1.0000E 00
2.71	8.9919E-05	1.0000E 00	1.5250E-05	1.0000E 00	3.3657E-04	1.0000E 00
2.72	8.4038E-05	1.0000E 00	1.4036E-05	1.0000E 00	3.1813E-04	1.0000E 00
2.73	7.8520E-05	1.0000E 00	1.2915E-05	1.0000E 00	3.0064E-04	1.0000E 00
2.74	7.3345E-05	1.0000E 00	1.1879E-05	1.0000E 00	2.8404E-04	1.0000E 00
2.75	6.8492E-05	1.0000E 00	1.0922E-05	1.0000E 00	2.6830E-04	1.0000E 00
2.76	6.3942E-05	1.0000E 00	1.0039E-05	1.0000E 00	2.5337E-04	1.0000E 00
2.77	5.9678E-05	1.0000E 00	9.2242E-06	1.0000E 00	2.3922E-04	1.0000E 00
2.78	5.5684E-05	1.0000E 00	8.4727E-06	1.0000E 00	2.2581E-04	1.0000E 00
2.79	5.1943E-05	1.0000E 00	7.7797E-06	1.0000E 00	2.1311E-04	1.0000E 00
2.80	4.8440E-05	1.0000E 00	7.1410E-06	1.0000E 00	2.0107E-04	1.0000E 00
2.81	4.5160E-05	1.0000E 00	6.5525E-06	1.0000E 00	1.8967E-04	1.0000E 00
2.82	4.2092E-05	1.0000E 00	6.0105E-06	1.0000E 00	1.7888E-04	1.0000E 00
2.83	3.9221E-05	1.0000E 00	5.5114E-06	1.0000E 00	1.6867E-04	1.0000E 00
2.84	3.6539E-05	1.0000E 00	5.0520E-06	1.0000E 00	1.5900E-04	1.0000E 00
2.85	3.4025E-05	1.0000E 00	4.6293E-06	1.0000E 00	1.4985E-04	1.0000E 00
2.86	3.1678E-05	1.0000E 00	4.2406E-06	1.0000E 00	1.4120E-04	1.0000E 00
2.87	2.9485E-05	1.0000E 00	3.8831E-06	1.0000E 00	1.3302E-04	1.0000E 00
2.88	2.7436E-05	1.0000E 00	3.5546E-06	1.0000E 00	1.2528E-04	1.0000E 00
2.89	2.5523E-05	1.0000E 00	3.2528E-06	1.0000E 00	1.1797E-04	1.0000E 00
2.90	2.3737E-05	1.0000E 00	2.9755E-06	1.0000E 00	1.1106E-04	1.0000E 00
2.91	2.2069E-05	1.0000E 00	2.7210E-06	1.0000E 00	1.0453E-04	1.0000E 00
2.92	2.0513E-05	1.0000E 00	2.4874E-06	1.0000E 00	9.8357E-05	1.0000E 00
2.93	1.9062E-05	1.0000E 00	2.2731E-06	1.0000E 00	9.2533E-05	1.0000E 00
2.94	1.7708E-05	1.0000E 00	2.0765E-06	1.0000E 00	8.7033E-05	1.0000E 00
2.95	1.6446E-05	1.0000E 00	1.8963E-06	1.0000E 00	8.1842E-05	1.0000E 00
2.96	1.5270E-05	1.0000E 00	1.7311E-06	1.0000E 00	7.6944E-05	1.0000E 00
2.97	1.4174E-05	1.0000E 00	1.5798E-06	1.0000E 00	7.2322E-05	1.0000E 00
2.98	1.3153E-05	1.0000E 00	1.4412E-06	1.0000E 00	6.7963E-05	1.0000E 00
2.99	1.2202E-05	1.0000E 00	1.3143E-06	1.0000E 00	6.3852E-05	1.0000E 00

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
3.00	1.1317E-05	1.0000E 00	1.1982E-06	1.0000E 00	5.9976E-05	1.0000E 00
3.01	1.0493E-05	1.0000E 00	1.0919E-06	1.0000E 00	5.6323E-05	1.0000E 00
3.02	9.7267E-06	1.0000E 00	9.9476E-07	1.0000E 00	5.2880E-05	1.0000E 00
3.03	9.0137E-06	1.0000E 00	9.0593E-07	1.0000E 00	4.9637E-05	1.0000E 00
3.04	8.3506E-06	1.0000E 00	8.2476E-07	1.0000E 00	4.6582E-05	1.0000E 00
3.05	7.7342E-06	1.0000E 00	7.5059E-07	1.0000E 00	4.3705E-05	1.0000E 00
3.06	7.1613E-06	1.0000E 00	6.8287E-07	1.0000E 00	4.0997E-05	1.0000E 00
3.07	6.6291E-06	1.0000E 00	6.2104E-07	1.0000E 00	3.8447E-05	1.0000E 00
3.08	6.1347E-06	1.0000E 00	5.6461E-07	1.0000E 00	3.6049E-05	1.0000E 00
3.09	5.6756E-06	1.0000E 00	5.1314E-07	1.0000E 00	3.3792E-05	1.0000E 00
3.10	5.2494E-06	1.0000E 00	4.6620E-07	1.0000E 00	3.1669E-05	1.0000E 00
3.11	4.8539E-06	1.0000E 00	4.2340E-07	1.0000E 00	2.9673E-05	1.0000E 00
3.12	4.4869E-06	1.0000E 00	3.8441E-07	1.0000E 00	2.7797E-05	1.0000E 00
3.13	4.1446E-06	1.0000E 00	3.4888E-07	1.0000E 00	2.6033E-05	1.0000E 00
3.14	3.8310E-06	1.0000E 00	3.1653E-07	1.0000E 00	2.4376E-05	1.0000E 00
3.15	3.5384E-06	1.0000E 00	2.8708E-07	1.0000E 00	2.2819E-05	1.0000E 00
3.16	3.2673E-06	1.0000E 00	2.6028E-07	1.0000E 00	2.1356E-05	1.0000E 00
3.17	3.0162E-06	1.0000E 00	2.3590E-07	1.0000E 00	1.9983E-05	1.0000E 00
3.18	2.7835E-06	1.0000E 00	2.1373E-07	1.0000E 00	1.8694E-05	1.0000E 00
3.19	2.5681E-06	1.0000E 00	1.9358E-07	1.0000E 00	1.7484E-05	1.0000E 00
3.20	2.3687E-06	1.0000E 00	1.7527E-07	1.0000E 00	1.6349E-05	1.0000E 00
3.21	2.1842E-06	1.0000E 00	1.5863E-07	1.0000E 00	1.5284E-05	1.0000E 00
3.22	2.0135E-06	1.0000E 00	1.4353E-07	1.0000E 00	1.4285E-05	1.0000E 00
3.23	1.8557E-06	1.0000E 00	1.2982E-07	1.0000E 00	1.3349E-05	1.0000E 00
3.24	1.7097E-06	1.0000E 00	1.1737E-07	1.0000E 00	1.2471E-05	1.0000E 00
3.25	1.5748E-06	1.0000E 00	1.0609E-07	1.0000E 00	1.1648E-05	1.0000E 00
3.26	1.4501E-06	1.0000E 00	9.5852E-08	1.0000E 00	1.0877E-05	1.0000E 00
3.27	1.3350E-06	1.0000E 00	8.6576E-08	1.0000E 00	1.0154E-05	1.0000E 00
3.28	1.2286E-06	1.0000E 00	7.8170E-08	1.0000E 00	9.4778E-06	1.0000E 00
3.29	1.1304E-06	1.0000E 00	7.0556E-08	1.0000E 00	8.8443E-06	1.0000E 00
3.30	1.0398E-06	1.0000E 00	6.3661E-08	1.0000E 00	8.2513E-06	1.0000E 00
3.31	9.5611E-07	1.0000E 00	5.7421E-08	1.0000E 00	7.6964E-06	1.0000E 00
3.32	8.7896E-07	1.0000E 00	5.1774E-08	1.0000E 00	7.1771E-06	1.0000E 00
3.33	8.0781E-07	1.0000E 00	4.6667E-08	1.0000E 00	6.6914E-06	1.0000E 00
3.34	7.4221E-07	1.0000E 00	4.2049E-08	1.0000E 00	6.2371E-06	1.0000E 00
3.35	6.8175E-07	1.0000E 00	3.7874E-08	1.0000E 00	5.8123E-06	1.0000E 00
3.36	6.2605E-07	1.0000E 00	3.4103E-08	1.0000E 00	5.4152E-06	1.0000E 00
3.37	5.7473E-07	1.0000E 00	3.0696E-08	1.0000E 00	5.0441E-06	1.0000E 00
3.38	5.2748E-07	1.0000E 00	2.7620E-08	1.0000E 00	4.6974E-06	1.0000E 00
3.39	4.8397E-07	1.0000E 00	2.4844E-08	1.0000E 00	4.3735E-06	1.0000E 00
3.40	4.4393E-07	1.0000E 00	2.2339E-08	1.0000E 00	4.0710E-06	1.0000E 00
3.41	4.0709E-07	1.0000E 00	2.0080E-08	1.0000E 00	3.7886E-06	1.0000E 00
3.42	3.7321E-07	1.0000E 00	1.8043E-08	1.0000E 00	3.5250E-06	1.0000E 00
3.43	3.4205E-07	1.0000E 00	1.6207E-08	1.0000E 00	3.2790E-06	1.0000E 00
3.44	3.1340E-07	1.0000E 00	1.4553E-08	1.0000E 00	3.0494E-06	1.0000E 00
3.45	2.8708E-07	1.0000E 00	1.3063E-08	1.0000E 00	2.8353E-06	1.0000E 00
3.46	2.6289E-07	1.0000E 00	1.1721E-08	1.0000E 00	2.6356E-06	1.0000E 00
3.47	2.4067E-07	1.0000E 00	1.0514E-08	1.0000E 00	2.4494E-06	1.0000E 00
3.48	2.2027E-07	1.0000E 00	9.4277E-09	1.0000E 00	2.2758E-06	1.0000E 00
3.49	2.0154E-07	1.0000E 00	8.4508E-09	1.0000E 00	2.1141E-06	1.0000E 00

VALUES OF GAUSSIAN CHARGE DISTRIBUTION CURVES

Z-Z(P)	SIGMA= 0.59		SIGMA= 0.53		SIGMA= 0.65	
	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE	FRACTION OF CHAIN INDEPENDENT	FRACTION OF CHAIN CUMULATIVE
3.50	1.8436E-07	1.0000E 00	7.5725E-09	1.0000E 00	1.9634E-06	1.0000E 00
3.51	1.6859E-07	1.0000E 00	6.7832E-09	1.0000E 00	1.8231E-06	1.0000E 00
3.52	1.5413E-07	1.0000E 00	6.0740E-09	1.0000E 00	1.6923E-06	1.0000E 00
3.53	1.4087E-07	1.0000E 00	5.4370E-09	1.0000E 00	1.5706E-06	1.0000E 00
3.54	1.2871E-07	1.0000E 00	4.8652E-09	1.0000E 00	1.4574E-06	1.0000E 00
3.55	1.1757E-07	1.0000E 00	4.3520E-09	1.0000E 00	1.3519E-06	1.0000E 00
3.56	1.0737E-07	1.0000E 00	3.8916E-09	1.0000E 00	1.2539E-06	1.0000E 00
3.57	9.8021E-08	1.0000E 00	3.4787E-09	1.0000E 00	1.1626E-06	1.0000E 00
3.58	8.9463E-08	1.0000E 00	3.1085E-09	1.0000E 00	1.0778E-06	1.0000E 00
3.59	8.1630E-08	1.0000E 00	2.7768E-09	1.0000E 00	9.9893E-07	1.0000E 00
3.60	7.4462E-08	1.0000E 00	2.4796E-09	1.0000E 00	9.2562E-07	1.0000E 00
3.61	6.7904E-08	1.0000E 00	2.2134E-09	1.0000E 00	8.5749E-07	1.0000E 00
3.62	6.1907E-08	1.0000E 00	1.9752E-09	1.0000E 00	7.9419E-07	1.0000E 00
3.63	5.6423E-08	1.0000E 00	1.7619E-09	1.0000E 00	7.3540E-07	1.0000E 00
3.64	5.1411E-08	1.0000E 00	1.5712E-09	1.0000E 00	6.8081E-07	1.0000E 00
3.65	4.6831E-08	1.0000E 00	1.4006E-09	1.0000E 00	6.3012E-07	1.0000E 00
3.66	4.2648E-08	1.0000E 00	1.2481E-09	1.0000E 00	5.8308E-07	1.0000E 00
3.67	3.8827E-08	1.0000E 00	1.1118E-09	1.0000E 00	5.3942E-07	1.0000E 00
3.68	3.5338E-08	1.0000E 00	9.9004E-10	1.0000E 00	4.9892E-07	1.0000E 00
3.69	3.2154E-08	1.0000E 00	8.8132E-10	1.0000E 00	4.6135E-07	1.0000E 00
3.70	2.9249E-08	1.0000E 00	7.8426E-10	1.0000E 00	4.2652E-07	1.0000E 00
3.71	2.6599E-08	1.0000E 00	6.9766E-10	1.0000E 00	3.9422E-07	1.0000E 00
3.72	2.4182E-08	1.0000E 00	6.2040E-10	1.0000E 00	3.6429E-07	1.0000E 00
3.73	2.1979E-08	1.0000E 00	5.5150E-10	1.0000E 00	3.3655E-07	1.0000E 00
3.74	1.9971E-08	1.0000E 00	4.9009E-10	1.0000E 00	3.1086E-07	1.0000E 00
3.75	1.8141E-08	1.0000E 00	4.3536E-10	1.0000E 00	2.8706E-07	1.0000E 00
3.76	1.6475E-08	1.0000E 00	3.8661E-10	1.0000E 00	2.6502E-07	1.0000E 00
3.77	1.4957E-08	1.0000E 00	3.4320E-10	1.0000E 00	2.4462E-07	1.0000E 00
3.78	1.3575E-08	1.0000E 00	3.0456E-10	1.0000E 00	2.2573E-07	1.0000E 00
3.79	1.2318E-08	1.0000E 00	2.7017E-10	1.0000E 00	2.0826E-07	1.0000E 00
3.80	1.1173E-08	1.0000E 00	2.3959E-10	1.0000E 00	1.9210E-07	1.0000E 00
3.81	1.0133E-08	1.0000E 00	2.1239E-10	1.0000E 00	1.7714E-07	1.0000E 00
3.82	9.1865E-09	1.0000E 00	1.8821E-10	1.0000E 00	1.6332E-07	1.0000E 00
3.83	8.3262E-09	1.0000E 00	1.6673E-10	1.0000E 00	1.5054E-07	1.0000E 00
3.84	7.5444E-09	1.0000E 00	1.4765E-10	1.0000E 00	1.3873E-07	1.0000E 00
3.85	6.8341E-09	1.0000E 00	1.3071E-10	1.0000E 00	1.2781E-07	1.0000E 00
3.86	6.1889E-09	1.0000E 00	1.1567E-10	1.0000E 00	1.1773E-07	1.0000E 00
3.87	5.6031E-09	1.0000E 00	1.0232E-10	1.0000E 00	1.0842E-07	1.0000E 00
3.88	5.0713E-09	1.0000E 00	9.0489E-11	1.0000E 00	9.9821E-08	1.0000E 00
3.89	4.5887E-09	1.0000E 00	7.9994E-11	1.0000E 00	9.1883E-08	1.0000E 00
3.90	4.1508E-09	1.0000E 00	7.0691E-11	1.0000E 00	8.4557E-08	1.0000E 00
3.91	3.7537E-09	1.0000E 00	6.2449E-11	1.0000E 00	7.7798E-08	1.0000E 00
3.92	3.3937E-09	1.0000E 00	5.5148E-11	1.0000E 00	7.1562E-08	1.0000E 00
3.93	3.0673E-09	1.0000E 00	4.8684E-11	1.0000E 00	6.5811E-08	1.0000E 00
3.94	2.7715E-09	1.0000E 00	4.2963E-11	1.0000E 00	6.0509E-08	1.0000E 00
3.95	2.5035E-09	1.0000E 00	3.7901E-11	1.0000E 00	5.5620E-08	1.0000E 00
3.96	2.2609E-09	1.0000E 00	3.3424E-11	1.0000E 00	5.1115E-08	1.0000E 00
3.97	2.0411E-09	1.0000E 00	2.9465E-11	1.0000E 00	4.6964E-08	1.0000E 00
3.98	1.8423E-09	1.0000E 00	2.5966E-11	1.0000E 00	4.3141E-08	1.0000E 00
3.99	1.6623E-09	1.0000E 00	2.2875E-11	1.0000E 00	3.9619E-08	1.0000E 00