

## Chapter V:

### Numerical Consideration

#### Numerical results for certain specified dataset for atmosphere and ocean:

In this section we shall reproduce numerical results of our calculations presented in section 2 & 3. Following subsections will be devoted to describe the model parameters chosen for atmosphere and Ocean, eigenvectors and eigenvalues etc and corresponding numerical results.

**5.1: Model parameters:** The model parameters are as follows.

(A) **Albedo** for single scattering both for atmosphere and ocean. (1). For **atmosphere** we have chosen an inhomogeneous albedo function of following form depending on optical depth and a parameters ' $\omega_0$ ' and 's' whose value is chosen as 0, (homogeneous), 10, 100, 1000 etc.

$$\omega^{AT}(z) = \omega_0 \exp(-z(at)/s) \quad (5.1.1)$$

(2) The inhomogeneity in the **oceanic albedo function** is expressed through the following equations where ocean direct and diffuse surface albedo  $\omega_{dir}^{OC}(\mu_0, U_s)$  depend on underlying wind speed over the ocean surface and solar zenith angle.

$$\omega^{OC}(z) = \omega_{dir}^{OC}(\mu_0, U_s) \exp(-z(oc)/s) \quad (5.1.2)$$

Here  $z(at)$  and  $z(oc)$  are desired representative optical depth in atmosphere and ocean respectively.

(B) Model 1: quadrature value (N) =2; s=10; refractive index=1.34;  $\omega_0=0.5$ ; incident direction=0.50; wind speed=3.0;

Atmosphere: Atmosphere is composed of spheroid particles having phase function expansion coefficients for Legendre series given by Table.

Ocean: Ocean is assumed to be composed of spherical particles having phase function coefficients of Legendre series as given in table.

First we show that the eigen values are optical depth sensitive for both the medium. This is obvious for an inhomogeneous media. It is to be noted that no numerical values of any sort are available in the literature so that our results can be verified. We have used equation (3.5.1) for atmosphere and ocean.

Standard textbook procedures are used to find the inverse of the matrix involved in equation (3.5.1). We have extensively used Matlab 7 software where LAPACK (DZEEV) algorithm is used to calculate the eigenvectors and eigen values of a real asymmetric matrix. We have taken first

five Legendre polynomials to calculate the R-functions and T-functions given in equations (2.15.12) and (2.15.13) respectively. In calculating (2.14.11) and (2.14.12) we have used twelve values of the basic constants for spherical and oblate spheroidal particles in the chosen ocean and atmosphere model given in table 2 and table 1 in Chapter 3 respectively. In calculation the summation in equation (2.11.7) and (2.11.16) we therefore have used 12 values for J starting from 0 to 11. In all calculations we have taken  $S=0$ .

We have already stated earlier that eigenvalues are sensitive to optical depth  $z$  in the case of inhomogeneous atmosphere. We have chosen optical depth (Atmosphere) value starting from 0.3, 0.5, 0.7 and 0.9 for atmosphere. However for ocean the corresponding values are taken as 1.0, 1.6, 2.5 and 3.5. For each optical depth the values of inhomogeneous parameter, 's' are chosen as 10, 100, and 1000. For these calculations we have chosen fixed albedo value 0.5 for  $\omega_0$ . For  $N=2$ , i.e, 4-stream approximation, there are eight eigenvectors corresponding to eight eigenvalues. We have seen that for this case the eigenvalues as well as eigenvectors are real. However this is not the case when value of N is chosen greater than 2.

In the tables given the first set of boxed data give the values of separation constants. The second set of arrayed data represents the positive eigenvectors whereas the third similar set is for negative eigenvectors. The last set of boxed data represents the calculated values of the quantity NAT and NOC from equation (4.3.18) and (4.3.33) respectively. These sets are used in subsequent calculations.

## Atmosphere Tables

### Table 1

Z(A<sub>t</sub>)=0.3, S=10

**Separation Constants:**

5.7922e-001	3.9228e-001	4.2631e-001	3.4747e-001	5.5796e-001	4.2236e-001	3.8975e-001	3.4747e-001
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**Eigen vector (positive):**

1.4518e+000	1.8431e+000	-1.9503e-001	2.2713e-003	-1.3982e-018	-6.9143e-016	-1.2901e-016	4.5905e-016
1.3860e-002	2.1650e-001	2.5003e+000	-4.9834e-001	1.7381e-016	-8.0439e-015	-1.6614e-016	-1.0050e-013
6.8774e-018	3.6882e-017	-3.8789e-016	5.0890e-015	9.8537e-003	3.1216e+000	-1.3436e-001	5.0004e-001
2.5961e-017	-1.1653e-017	1.6691e-016	-1.1357e-015	1.5134e+000	-1.4038e-001	2.0669e+000	1.4022e-003
2.3499e+000	2.0662e+000	1.9020e-001	-2.8720e-003	-4.5362e-018	6.9860e-016	1.4641e-016	-5.8060e-016
4.1889e-003	7.4492e-002	-8.0412e-001	2.8339e+000	-6.1713e-016	-2.8353e-015	1.9231e-015	5.7156e-013
-6.0923e-020	-2.7461e-020	2.0086e-019	-4.7263e-018	2.9880e-003	1.0088e+000	-4.6651e-002	2.8323e+000
4.3843e-017	-2.0024e-017	2.8574e-016	-1.9620e-015	2.5600e+000	1.2787e-001	2.2196e+000	-1.7234e-003

**Eigenvector (Negative):**

-1.6487e-001	-1.7757e-001	-2.5023e-002	1.0145e-004	-1.2402e-020	-8.6280e-017	-1.2158e-017	2.0626e-017
3.6074e-003	1.5464e-002	-2.8169e-001	-5.4288e-003	-2.6176e-017	-9.5228e-016	3.9383e-017	-1.0936e-015
-1.7900e-018	-2.6343e-018	4.3701e-017	-5.5438e-017	-2.3921e-003	-3.3734e-001	9.1645e-003	-5.4462e-003
-2.8540e-018	-9.8323e-019	7.1648e-018	-1.6383e-016	1.3836e-001	1.6780e-002	-1.8601e-001	-5.9269e-005
-5.1564e-002	8.9456e-003	1.1629e-002	1.9369e-004	-6.2783e-019	3.9655e-017	3.1585e-019	3.8880e-017
1.0454e-003	4.4716e-003	-8.1495e-002	-1.5688e-003	1.4779e-016	-2.5268e-016	-1.0113e-016	-3.1475e-016
1.5204e-020	1.6485e-021	-2.0357e-020	-2.6164e-021	-6.9308e-004	-9.7589e-002	2.6500e-003	-1.5738e-003
-1.1402e-018	-3.3477e-018	3.6149e-017	-4.4234e-016	1.8750e-002	-8.3352e-003	1.3235e-002	-1.1113e-004

**NAT () from Equation (4.3.18):**

1.1292e+000	1.2738e+000	1.4585e+000	1.0268e+000	1.2966e+000	2.2635e+000	1.5399e+000	1.0261e+000
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**Table 2**

**Z(A<sub>t</sub>)=0.3, S=100**

**Separation Constants:**

5.9055e-001	3.9397e-001	4.2967e-001	5.6775e-001	3.4747e-001	4.2552e-001	3.9134e-001	3.4747e-001
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**Eigen Vector (Positive):**

1.4534e+000	1.8369e+000	1.9349e-001	3.0838e-017	2.1924e-003	-2.3179e-015	1.6590e-016	1.0217e-014
1.3729e-002	2.1554e-001	2.4926e+000	2.3926e-016	-4.9654e-001	-2.7622e-014	-1.0983e-016	-2.3126e-012
4.1191e-017	8.8223e-016	4.3660e-015	9.8287e-003	9.0183e-013	3.1357e+000	-1.3409e-001	4.9818e-001
2.7942e-018	1.3299e-016	5.1136e-016	1.5207e+000	-2.3721e-016	-1.4040e-001	2.0650e+000	1.3532e-003
2.3412e+000	2.0674e+000	-1.8959e-001	7.8310e-017	-2.7794e-003	2.3467e-015	-1.8522e-016	-1.2949e-014
4.1430e-003	7.3754e-002	7.9865e-001	-2.5639e-016	2.8342e+000	-7.8948e-015	5.4042e-016	1.3198e-011
6.1034e-018	2.4712e-016	1.0182e-015	2.9756e-003	-5.1283e-012	1.0094e+000	-4.6290e-002	2.8326e+000
1.7670e-018	1.6241e-016	5.1136e-016	2.5611e+000	-9.0439e-016	1.2843e-001	2.2259e+000	-1.6673e-003

**Eigen Vector (Negative):**

-1.7206e-001	-1.8298e-001	2.5736e-002	7.4805e-018	1.0086e-004	-3.0152e-016	1.7168e-017	4.6967e-016
3.6969e-003	1.5855e-002	2.9046e-001	-1.7159e-017	-5.4101e-003	-3.3197e-015	3.9543e-018	-2.5261e-014
-1.1092e-017	-6.4897e-017	-5.0877e-016	-2.4662e-003	-9.8260e-015	-3.5039e-001	9.4173e-003	-5.4270e-003
-5.0830e-019	7.2892e-018	-1.3091e-018	1.4471e-001	-6.7676e-017	1.7388e-002	-1.9208e-001	-5.8881e-005
-5.4699e-002	8.5913e-003	-1.1955e-002	-9.8433e-019	1.9428e-004	1.3948e-016	-1.1717e-018	9.0719e-016
1.0715e-003	4.5849e-003	8.4037e-002	7.4000e-017	-1.5634e-003	-1.0605e-015	-3.2879e-017	-7.2727e-015
-1.5785e-018	-1.5362e-017	-1.0714e-016	-7.1463e-004	-2.8289e-015	-1.0137e-001	2.7232e-003	-1.5682e-003
1.5610e-019	3.2687e-017	9.2316e-017	2.0318e-002	-1.7645e-016	-8.6340e-003	1.3019e-002	-1.1146e-004

**NAT() from Equation (4.3.18):**

1.1247e+000	1.2688e+000	1.4476e+000	1.3017e+000	1.0266e+000	2.2812e+000	1.5410e+000	1.0259e+000
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**Table 3**

**Z(A<sub>t</sub>)=0.3, S=1000**

**Separation Constants:**

5.9173e-001	3.9414e-001	4.3001e-001	5.6876e-001	4.2584e-001	3.9150e-001	3.4747e-001	3.4747e-001
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**Eigen Vector (Positive):**

1.4535e+000	1.8363e+000	1.9334e-001	-8.6352e-018	-1.6471e-016	3.5198e-016	2.1847e-003	1.1885e-014
1.3716e-002	2.1544e-001	2.4918e+000	-5.7112e-016	-2.8214e-015	-4.3230e-016	-4.9636e-001	-2.6998e-012
-1.0743e-017	-2.2788e-016	-1.1311e-015	9.8261e-003	3.1372e+000	1.3407e-001	8.1896e-014	4.9800e-001
-6.3826e-018	-2.9319e-016	-1.1436e-015	1.5214e+000	-1.4040e-001	2.0648e+000	9.6310e-015	1.3484e-003
2.3403e+000	2.0675e+000	-1.8953e-001	3.0893e-018	1.8361e-016	-3.9204e-016	-2.7703e-003	-1.5070e-014
4.1383e-003	7.3681e-002	7.9810e-001	1.2261e-015	6.5182e-016	1.5767e-015	2.8342e+000	1.5415e-011
-1.6020e-018	-6.4039e-017	-2.6510e-016	2.9744e-003	1.0095e+000	4.6255e-002	-4.7229e-013	2.8326e+000
-2.1835e-018	-2.5181e-016	-7.5482e-016	2.5612e+000	1.2849e-001	2.2265e+000	-6.8470e-015	-1.6618e-003

**Eigen Vector (Negative):**

-1.7281e-001	-1.8353e-001	2.5809e-002	-1.6216e-018	-2.3342e-017	3.6014e-017	1.0080e-004	5.4850e-016
3.7059e-003	1.5895e-002	2.9136e-001	6.1635e-017	-2.8855e-016	-6.6538e-018	-5.4083e-003	-2.9434e-014
2.9028e-018	1.6812e-017	1.3226e-016	-2.4738e-003	-3.5173e-001	-9.4431e-003	-8.9233e-016	-5.4251e-003
1.2844e-018	-9.1236e-018	2.8630e-017	1.4537e-001	1.7451e-002	1.9270e-001	-9.1858e-017	-5.8844e-005
-5.5026e-002	8.5527e-003	-1.1988e-002	1.8906e-018	1.7380e-017	-1.1886e-018	1.9434e-004	1.0575e-015
1.0741e-003	4.5964e-003	8.4296e-002	-3.1931e-016	-2.4070e-016	-1.0381e-016	-1.5629e-003	-8.4731e-015
4.1580e-019	3.9949e-018	2.8001e-017	-7.1683e-004	-1.0176e-001	-2.7307e-003	-2.6043e-016	-1.5677e-003
-5.3868e-019	-6.1362e-017	-1.8376e-016	2.0484e-002	-8.6646e-003	-1.2995e-002	2.8979e-017	-1.1149e-004

**NAT() from Equation (4.3.18):**

1.1242e+000	1.2683e+000	1.4465e+000	1.3023e+000	2.2830e+000	1.5411e+000	1.0266e+000	1.0259e+000
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**Table 4**

**Z(A<sub>t</sub>)=0.5, S=10**

**Separation Constants:**

5.7131e-001	3.9108e-001	4.2394e-001	3.4747e-001	5.5110e-001	4.2013e-001	3.8862e-001	3.4747e-001
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**Eigen Vector (Positive):**

1.4506e+000	1.8476e+000	-1.9617e-001	-2.3318e-003	1.8321e-018	-1.6042e-015	7.3404e-017	9.5422e-016
-1.3953e-002	-2.1721e-001	2.5058e+000	4.9971e-001	-1.5721e-018	-1.8833e-014	-2.6633e-017	-2.0549e-013
-1.6970e-017	-5.7646e-017	-5.7929e-015	-4.9446e-016	-9.8718e-003	3.1115e+000	1.3457e-001	-5.0146e-001
-6.4476e-017	6.1814e-017	8.5772e-016	3.6594e-016	1.5082e+000	-1.4039e-001	2.0683e+000	-1.4399e-003
2.3562e+000	2.0653e+000	1.9064e-001	2.9429e-003	1.9081e-018	1.6087e-015	-8.3191e-017	-1.2059e-015
-4.2219e-003	-7.5053e-002	-8.0819e-001	2.8336e+000	2.6836e-017	-5.9659e-015	-3.0048e-016	1.1661e-012
-2.0490e-018	-1.5449e-019	-1.6843e-015	2.3501e-015	-2.9971e-003	1.0085e+000	4.6929e-002	2.8320e+000
-1.0994e-016	1.0808e-016	8.6804e-016	1.2534e-015	2.5594e+000	1.2748e-001	2.2149e+000	1.7663e-003

**Eigen Vector (Negative):**

1.5980e-001	1.7369e-001	-2.4511e-002	-1.0193e-004	1.6739e-019	-1.9609e-016	6.7596e-018	4.1752e-017
-3.5419e-003	-1.5182e-002	-2.7538e-001	5.4430e-003	9.1949e-019	-2.1515e-015	-1.2941e-017	-2.2096e-015
4.3077e-018	4.0291e-018	6.3664e-016	5.3858e-018	2.3389e-003	-3.2807e-001	-8.9831e-003	5.4609e-003
6.8323e-018	5.1929e-018	-1.3550e-018	8.9701e-017	-1.3389e-001	1.6348e-002	1.8167e-001	5.9579e-005
4.9400e-002	-9.1729e-003	1.1392e-002	-1.9328e-004	1.4145e-019	9.0216e-017	-2.4241e-019	7.8509e-017
-1.0264e-003	-4.3902e-003	-7.9669e-002	1.5729e-003	-5.9089e-018	-6.3540e-016	1.2376e-017	-6.3537e-016
4.9813e-019	9.0368e-021	1.6603e-016	1.3045e-018	6.7762e-004	-9.4906e-002	-2.5975e-003	1.5781e-003
2.7836e-018	1.7518e-017	1.4736e-016	2.3531e-016	-1.7684e-002	-8.1223e-003	-1.3363e-002	1.1091e-004

**NAT() from Equation (4.3.18):**

1.1324e+000	1.2774e+000	1.4664e+000	1.0269e+000	1.2929e+000	2.2509e+000	1.5391e+000	1.0262e+000
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**Table 5****Z(A<sub>t</sub>)=0.5, S=100**

Separation Constants:

5.8968e-001	3.9384e-001	4.2942e-001	3.4747e-001	5.6700e-001	4.2528e-001	3.9122e-001	3.4747e-001
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Eigen Vector (Positive):

1.4533e+000	1.8373e+000	-1.9361e-001	-2.1981e-003	-4.9345e-019	-2.5800e-015	-1.8300e-016	2.4838e-015
-1.3739e-002	-2.1561e-001	2.4932e+000	4.9667e-001	-1.1152e-016	-3.0245e-014	-3.7122e-017	-5.5946e-013
-4.2524e-017	-1.3579e-016	-1.3340e-014	-1.8407e-015	-9.8306e-003	3.1347e+000	-1.3411e-001	4.9832e-001
-6.4515e-017	5.7517e-017	1.1310e-015	-6.5965e-017	1.5201e+000	-1.4039e-001	2.0652e+000	1.3568e-003
2.3418e+000	2.0673e+000	1.8964e-001	2.7862e-003	7.3207e-019	2.6029e-015	2.0802e-016	-3.1441e-015
-4.1464e-003	-7.3808e-002	-7.9905e-001	2.8341e+000	4.2004e-016	-1.0233e-014	1.2873e-015	3.1906e-012
-5.1629e-018	-6.1161e-019	-3.8379e-015	5.5092e-015	5.5092e-015	1.0094e+000	-4.6316e-002	2.8325e+000
-1.1033e-016	9.9684e-017	5.4033e-016	1.6952e-015	2.5610e+000	1.2839e-001	2.2254e+000	-1.6714e-003

Eigen Vector (Negative):

1.7152e-001	1.8257e-001	-2.5683e-002	-1.0090e-004	-1.5854e-019	-3.3414e-016	-1.7948e-017	1.1376e-016
-3.6902e-003	-1.5825e-002	-2.8980e-001	5.4115e-003	1.8150e-017	-3.6813e-015	3.7311e-017	-6.1616e-015
1.1422e-017	9.9669e-018	1.5507e-015	2.0056e-017	2.4606e-003	-3.4940e-001	9.3982e-003	-5.4284e-003
7.2560e-018	5.0748e-018	-4.1685e-017	1.0781e-016	-1.4423e-001	1.7342e-002	-1.9162e-001	-5.8908e-005
5.4457e-002	-8.6195e-003	1.1931e-002	-1.9423e-004	2.8583e-019	1.5179e-016	5.9803e-019	2.2129e-016
-1.0695e-003	-4.5764e-003	-8.3846e-002	1.5638e-003	-1.0345e-016	-1.0155e-015	-6.5499e-017	-1.7748e-015
1.3317e-018	3.7922e-020	4.0272e-016	3.0398e-018	7.1301e-004	-1.0108e-001	2.7177e-003	-1.5687e-003
3.1595e-018	1.7116e-017	1.6842e-016	2.6910e-016	-2.0196e-002	-8.6114e-003	1.3037e-002	-1.1143e-004

NAT() from Equation (4.3.18)

1.1250e+000	1.2691e+000	1.4484e+000	1.0266e+000	1.3013e+000	2.2799e+000	1.5409e+000	1.0259e+000
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**Table 6****Z(A<sub>t</sub>)=0.5, S=1000**

Separation Constants:

5.9164e-001	3.9413e-001	4.2999e-001	5.6869e-001	4.2582e-001	3.9149e-001	3.4747e-001	3.4747e-001
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**Eigen Vector (Positive):**

1.4535e+000	1.8363e+000	1.9335e-001	1.8363e-017	6.3421e-016	-9.3000e-016	-2.1853e-003	1.6675e-014
-1.3717e-002	-2.1545e-001	2.4918e+000	4.5125e-016	7.9377e-015	-2.5977e-017	4.9638e-001	-3.7865e-012
6.4943e-017	6.9742e-016	-5.2737e-015	9.8263e-003	3.1371e+000	1.3407e-001	-4.6236e-014	-4.9801e-001
3.2357e-018	4.9073e-017	-3.3301e-016	1.5213e+000	-1.4040e-001	2.0648e+000	-4.1155e-015	-1.3488e-003
2.3403e+000	2.0675e+000	-1.8954e-001	2.9531e-017	-6.4555e-016	1.0549e-015	2.7710e-003	-2.1144e-014
-4.1386e-003	-7.3686e-002	7.9814e-001	-8.4051e-016	8.7895e-016	6.4216e-015	2.8342e+000	2.1619e-011
1.2229e-017	1.8108e-016	-1.2352e-015	2.9745e-003	1.0095e+000	4.6257e-002	2.3690e-013	2.8326e+000
3.9348e-018	6.1449e-017	-4.1440e-016	2.5612e+000	1.2849e-001	2.2264e+000	4.5722e-015	1.6622e-003

**Eigen Vector (Negative):**

1.7275e-001	1.8349e-001	2.5804e-002	4.0495e-018	8.3353e-017	-9.1273e-017	-1.0080e-004	7.6921e-016
-3.7052e-003	-1.5892e-002	2.9129e-001	-4.4371e-017	9.0806e-016	2.1103e-016	5.4084e-003	-4.1301e-014
-1.7543e-017	-5.1442e-017	6.1648e-016	-2.4732e-003	-3.5163e-001	-9.4412e-003	5.0378e-016	5.4252e-003
-4.6907e-019	2.7996e-018	-4.5194e-018	1.4532e-001	1.7446e-002	1.9266e-001	1.4689e-016	5.8846e-005
5.5002e-002	-8.5556e-003	-1.1986e-002	-1.5168e-018	-4.0117e-017	1.3464e-018	-1.9434e-004	1.4836e-015
-1.0739e-003	-4.5956e-003	8.4277e-002	2.2257e-016	4.3154e-016	-3.1851e-016	1.5629e-003	-1.1890e-014
-3.1731e-018	-1.1293e-017	1.3043e-016	-7.1667e-004	-1.0173e-001	-2.7301e-003	1.3063e-016	1.5677e-003
-3.8281e-021	1.2254e-017	-6.5176e-017	2.0471e-002	-8.6623e-003	-1.2996e-002	2.5807e-016	1.1149e-004

**NAT() from Equation (4.3.18):**

1.1242e+000	1.2683e+000	1.4466e+000	1.3022e+000	2.2829e+000	1.5411e+000	1.0266e+000	1.0259e+000
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**Table 7**

$$\underline{Z(At)=0.7, S=10}$$

Separation Constants:

5.6377e-001	3.8991e-001	4.2164e-001	5.4454e-001	4.1797e-001	3.4747e-001	3.8752e-001	3.4747e-001
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Eigen Vector (Positive):

1.4492e+000	1.8522e+000	1.9731e-001	1.0385e-017	-3.5422e-015	-2.3942e-003	1.3340e-017	-1.3392e-014
1.4042e-002	2.1794e-001	2.5111e+000	7.2491e-016	-4.0043e-014	5.0112e-001	-5.9206e-018	2.8045e-012
-5.4855e-017	-1.2815e-015	-6.2144e-015	-9.8893e-003	3.1017e+000	-2.5697e-013	1.3478e-001	-5.0292e-001
-1.5824e-018	-8.6703e-017	-3.2224e-016	1.5030e+000	1.4042e-001	-3.2576e-015	2.0698e+000	-1.4787e-003
2.3622e+000	2.0644e+000	-1.9109e-001	-1.5810e-017	3.5163e-015	3.0158e-003	-1.5213e-017	1.6873e-014
4.2540e-003	7.5627e-002	8.1226e-001	-1.5004e-015	-1.7362e-014	2.8334e+000	-6.7979e-017	-1.5859e-011
-8.0535e-018	-3.6338e-016	-1.4662e-015	-3.0062e-003	1.0084e+000	1.4610e-012	4.7215e-002	2.8318e+000
-1.4950e-018	-1.4363e-016	-4.5084e-016	2.5588e+000	-1.2711e-001	1.9114e-016	2.2104e+000	1.8105e-003

Eigen Vector (Negative):

-1.5492e-001	-1.6991e-001	2.4012e-002	1.0328e-018	-4.2038e-016	-1.0244e-004	1.1756e-018	-5.7312e-016
3.4772e-003	1.4908e-002	2.6924e-001	-6.9955e-017	-4.6119e-015	5.4575e-003	-2.8704e-018	3.0501e-014
1.3584e-017	8.7659e-017	6.6630e-016	2.2871e-003	3.1913e-001	2.7986e-015	-8.8067e-003	5.4760e-003
2.3459e-019	-6.6101e-018	-7.0784e-018	-1.2961e-001	-1.5932e-002	-9.6360e-017	1.7744e-001	5.9907e-005
-4.7359e-002	9.3726e-003	-1.1161e-002	-1.8248e-018	1.8621e-016	-1.9291e-004	-3.7784e-020	-1.0777e-015
1.0076e-003	4.3107e-003	7.7888e-002	3.5901e-016	-9.3648e-016	1.5771e-003	2.7245e-018	8.7764e-015
1.9075e-018	2.0713e-017	1.4059e-016	6.6258e-004	9.2317e-002	8.1318e-016	-2.5465e-003	1.5824e-003
-4.0752e-020	-2.3239e-017	-6.1132e-017	-1.6693e-002	7.9163e-003	-3.3004e-016	-1.3465e-002	1.1071e-004

NAT() from Equation (4.3.18):

1.1353e+000	1.2810e+000	1.4740e+000	1.2894e+000	2.2387e+000	1.0271e+000	1.5383e+000	1.0264e+000
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**Table 8**

$$\underline{Z(A_t)=0.7, S=100}$$

Separation Constants:

5.8882e-001	3.9372e-001	4.2916e-001	3.4747e-001	5.6626e-001	4.2504e-001	3.9110e-001	3.4747e-001
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Eigen Vector (Positive):

1.4532e+000	1.8378e+000	-1.9372e-001	2.2039e-003	5.6976e-020	3.0404e-015	-3.4591e-017	-1.3024e-015
1.3749e-002	2.1568e-001	2.4937e+000	-4.9680e-001	-7.4440e-017	3.5456e-014	1.9957e-016	2.9172e-013
4.6352e-019	6.4027e-018	-6.9142e-017	8.9034e-016	9.8324e-003	3.1336e+000	-1.3413e-001	-4.9845e-001
1.2063e-016	-1.3796e-017	3.4228e-016	1.6993e-016	1.5196e+000	1.4039e-001	2.0653e+000	-1.3603e-003
2.3425e+000	2.0672e+000	1.8968e-001	-2.7929e-003	-1.1990e-018	-3.0594e-015	3.8634e-017	1.6481e-015
4.1499e-003	7.3862e-002	-7.9946e-001	2.8341e+000	4.0648e-016	1.1564e-014	-9.9252e-016	-1.6629e-012
-7.3464e-018	-3.6083e-017	3.8205e-016	-5.1005e-015	2.9775e-003	1.0093e+000	-4.6343e-002	2.8325e+000
2.0106e-016	-3.3412e-017	6.8737e-016	-1.0950e-015	2.5609e+000	-1.2835e-001	2.2249e+000	1.6755e-003

Eigen Vector (Negative):

-1.7097e-001	-1.8216e-001	-2.5629e-002	1.0094e-004	-1.4226e-019	3.9207e-016	-3.3823e-018	-5.9744e-017
3.6836e-003	1.5796e-002	-2.8914e-001	-5.4129e-003	1.6400e-017	4.2896e-015	-4.8708e-018	3.2233e-015
-1.2418e-019	-4.6893e-019	8.0168e-018	-9.7006e-018	-2.4551e-003	3.4841e-001	9.3792e-003	5.4298e-003
-1.3864e-017	-1.8356e-018	2.1743e-017	-6.4811e-017	1.4374e-001	-1.7296e-002	-1.9117e-001	5.8936e-005
-5.4218e-002	8.6474e-003	1.1906e-002	1.9419e-004	1.5377e-019	-1.7558e-016	-7.6640e-020	-1.1533e-016
1.0676e-003	4.5679e-003	-8.3655e-002	-1.5642e-003	-9.7752e-017	1.2266e-015	6.0713e-017	9.2860e-016
1.8899e-018	2.2315e-018	-3.9978e-017	-2.8150e-018	-7.1139e-004	1.0080e-001	2.7122e-003	1.5691e-003
-5.3697e-018	-5.0659e-018	8.2091e-017	-1.5827e-016	2.0076e-002	8.5889e-003	1.3054e-002	1.1141e-004

NAT() from Equation (4.3.18):

1.1254e+000	1.2695e+000	1.4493e+000	1.0266e+000	1.3009e+000	2.2785e+000	1.5408e+000	1.0259e+000
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**Table 9**

**Z(A<sub>t</sub>)=0.7, S=1000**

**Separation Constants:**

5.9155e-001	3.9412e-001	4.2996e-001	5.6861e-001	3.4747e-001	4.2579e-001	3.9148e-001	3.4747e-001
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**Eigen Vector (Positive):**

-	-	1.9336e-001	-3.7135e-018	2.1858e-003	-4.9336e-015	1.0835e-016	3.2953e-015
1.4535e+000	1.8364e+000	2.4919e+000	2.7554e-016	-4.9639e-001	-5.7466e-014	4.1791e-016	-7.4566e-013
1.3718e-002	2.1546e-001	-7.6084e-015	9.8265e-003	-6.9346e-013	-	1.3407e-001	-4.9802e-001
-7.3485e-017	-1.5369e-015	-1.2799e-015	1.5213e+000	-3.8968e-015	3.1370e+000	-	-1.3491e-003
1.7356e-016	1.3814e-016	-1.8954e-001	-7.3725e-018	-2.7717e-003	1.4040e-001	2.0649e+000	-4.1753e-015
2.3404e+000	2.0675e+000	-1.2125e-015	2.8342e+000	-1.9225e-014	4.9842e-015	-1.2507e-016	4.2549e-012
4.1390e-003	7.3692e-002	7.9818e-001	2.9745e-003	3.9523e-012	-	4.6260e-002	2.8326e+000
-1.1064e-017	-4.3107e-016	-3.0867e-015	2.5612e+000	5.5850e-015	1.0095e+000	-1.2848e-001	1.6627e-003
2.8600e-016	2.4422e-017	-	-	-	-	2.2264e+000	-

**Eigen Vector (Negative):**

-1.7270e-001	-1.8345e-001	2.5798e-002	-2.2950e-019	1.0081e-004	-6.4017e-016	1.0755e-017	1.5162e-016
3.7046e-003	1.5889e-002	2.9122e-001	-5.1092e-017	-5.4086e-003	-7.0258e-015	-3.9983e-017	-8.2132e-015
1.9845e-017	1.1334e-016	8.8918e-016	-2.4727e-003	7.5558e-015	3.5153e-001	-9.4393e-003	5.4254e-003
-2.0334e-017	-1.9167e-018	-1.1602e-016	1.4527e-001	2.2114e-016	-1.7442e-002	1.9261e-001	5.8849e-005
-5.4978e-002	8.5584e-003	-1.1984e-002	-9.2445e-019	1.9433e-004	2.8805e-016	-9.9432e-019	2.9469e-016
1.0737e-003	4.5947e-003	8.4258e-002	2.9736e-016	-1.5629e-003	-1.9589e-015	1.7290e-016	-2.3657e-015
2.8701e-018	2.6878e-017	1.8739e-016	-7.1651e-004	2.1795e-015	1.0170e-001	-2.7295e-003	1.5678e-003
-7.5385e-018	1.9202e-017	-3.4009e-016	2.0459e-002	4.5053e-016	8.6601e-003	-1.2998e-002	1.1149e-004

**NAT() from Equation (4.3.18):**

1.1243e+000	1.2683e+000	1.4467e+000	1.3022e+000	1.0266e+000	2.2828e+000	1.5411e+000	1.0259e+000
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**Table 10**

$$Z(A_t)=0.9, S=10$$

Separation Constants:

5.5659e-001	3.8877e-001	4.1943e-001	3.4747e-001	5.3827e-001	3.4747e-001	3.8644e-001	4.1588e-001
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Eigen Vector (Positive):

- 1.4478e+000	- 1.8566e+000	1.9844e-001	2.4585e-003	1.2174e-019	-2.4986e-015	-7.4978e-017	1.0483e-015
1.4128e-002	2.1867e-001	2.5162e+000	-5.0256e-001	3.7217e-017	5.1082e-013	-6.9569e-017	1.2286e-014
-4.3809e-018	-2.4668e-017	-2.5344e-016	-3.2106e-015	9.9066e-003	5.0441e-001	-1.3500e-001	- 3.0922e+000
0	0	0	0	- 1.4980e+000	1.5187e-003	2.0713e+000	1.4047e-001
- 2.3680e+000	2.0634e+000	-1.9153e-001	-3.0907e-003	-1.0754e-018	3.1422e-015	8.4671e-017	-1.0436e-015
4.2853e-003	7.6214e-002	8.1635e-001	2.8331e+000	-1.1014e-016	-2.8799e-012	8.2311e-016	3.5522e-015
0	0	0	0	3.0152e-003	- 2.8315e+000	-4.7510e-002	- 1.0084e+000
0	0	0	0	- 2.5584e+000	-1.8559e-003	- 2.2058e+000	-1.2675e-001

Eigen Vector (Negative):

-1.5023e-001	-1.6623e-001	2.3526e-002	1.0298e-004	8.6185e-021	-1.0471e-016	-6.6298e-018	1.2175e-016
3.4134e-003	1.4640e-002	2.6324e-001	-5.4724e-003	-4.5286e-018	5.5563e-015	1.5731e-017	1.3242e-015
1.0584e- 018	1.6515e-018	2.6515e-017	3.4960e-017	-2.2367e-003	-5.4915e-003	8.6349e-003	3.1050e-001
0	0	0	0	1.2551e-001	-6.0255e-005	-1.7334e-001	-1.5530e-002
-4.5432e-002	9.5467e-003	-1.0935e-002	1.9257e-004	-9.2287e-020	-1.9528e-016	4.0774e-019	-5.6029e-017
9.8899e-004	4.2332e-003	7.6152e-002	-1.5814e-003	2.4789e-017	1.5986e-015	-3.9995e-017	4.2353e-016
0	0	0	0	-6.4793e-004	-1.5869e-003	2.4968e-003	8.9817e-002
0	0	0	0	1.5769e-002	-1.1053e-004	1.3545e-002	7.7168e-003

NAT() from Equation (4.3.18):

1.1380e+000	1.2846e+000	1.4814e+000	1.0272e+000	1.2860e+000	1.0265e+000	1.5376e+000	2.2269e+000
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**Table 11**Z(A<sub>t</sub>)=0.9, S=100

Separation Constants:

5.8796e-001	3.9359e-001	4.2891e-001	3.4747e-001	5.6552e-001	4.2480e-001	3.9098e-001	3.4747e-001
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Eigen Vector (Positive):

-1.4530e+00	-1.8383e+00	-1.9383e-001	2.2097e-003	2.3371e-018	7.2556e-016	-4.7931e-017	2.5227e-015
1.3759e-002	2.1575e-001	-2.4943e+00	-4.9694e-001	2.4073e-016	7.9919e-015	4.5969e-018	-5.6659e-013
4.0249e-018	2.1072e-017	-2.2346e-016	2.9664e-015	-9.8343e-003	-3.1325e+00	1.3415e-001	4.9859e-001
1.7316e-017	-7.7377e-018	1.1152e-016	-7.7427e-016	1.5190e+000	1.4039e-001	-2.0654e+00	1.3639e-003
-2.3432e+00	2.0671e+000	1.8973e-001	-2.7997e-003	-4.8986e-019	-7.1597e-016	5.3388e-017	-3.1958e-015
4.1533e-003	7.3916e-002	-7.9986e-001	2.8341e+000	-2.7773e-016	3.0773e-015	6.8995e-016	3.2307e-012
-3.4696e-020	1.1469e-020	-1.7927e-019	9.9887e-019	-2.9784e-003	-1.0093e+00	4.6369e-002	-2.8325e+00
2.9143e-017	-1.3252e-017	1.9028e-016	-1.3331e-015	2.5609e+000	-1.2831e-001	2.2244e+000	-1.6796e-003

Eigen Vector (Negative):

-1.7043e-001	-1.8176e-001	-2.5576e-002	1.0098e-004	9.0368e-019	9.2447e-017	-4.4337e-018	1.1521e-016
3.6769e-003	1.5767e-002	-2.8849e-001	-5.4142e-003	-1.7565e-017	9.8106e-016	2.4061e-017	-6.1958e-015
-1.0756e-018	-1.5399e-018	2.5844e-017	-3.2319e-017	2.4495e-003	3.4743e-001	-9.3603e-003	-5.4312e-003
-1.9665e-018	-6.6868e-019	4.8661e-018	-1.1448e-016	-1.4326e-001	-1.7251e-002	1.9071e-001	-5.8964e-005
-5.3980e-002	8.6750e-003	1.1882e-002	1.9414e-004	-1.3431e-018	-3.6884e-017	-5.8699e-019	2.2194e-016
1.0656e-003	4.5594e-003	-8.3465e-002	-1.5646e-003	7.8469e-017	2.3379e-016	-3.3224e-017	-1.7838e-015
8.9021e-021	-7.0742e-022	1.8707e-020	5.5142e-022	7.0977e-004	1.0051e-001	-2.7067e-003	-1.5695e-003
-7.9399e-019	-2.2753e-018	2.4682e-017	-3.0855e-016	-1.9956e-002	8.5664e-003	-1.3072e-002	-1.1138e-004

NAT() from Equation (4.3.18):

1.1257e+000	1.2699e+000	1.4501e+000	1.0266e+000	1.3006e+000	2.2772e+000	1.5407e+000	1.0259e+000
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**Table 12**

**Z(A<sub>t</sub>)=0.9, S=1000**

**Separation Constants:**

5.9146e-001	3.9410e-001	4.2994e-001	5.6854e-001	3.4747e-001	4.2577e-001	3.9147e-001	3.4747e-001
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**Eigen Vector (Positive):**

-1.4535e+00	-1.8364e+00	1.9337e-001	6.7674e-018	2.1864e-003	-2.3474e-015	-3.6843e-016	-1.1443e-014
1.3719e-002	2.1546e-001	2.4920e+000	3.4225e-016	-4.9640e-001	-2.5766e-014	-3.1475e-016	2.5968e-012
5.0543e-017	1.0772e-015	5.3402e-015	9.8267e-003	1.0367e-012	3.1369e+000	-1.3407e-001	4.9804e-001
4.2158e-018	1.9704e-016	7.6278e-016	-1.5212e+00	-2.3454e-015	-1.4040e-001	2.0649e+000	1.3495e-003
-2.3405e+00	2.0675e+000	-1.8954e-001	-2.9844e-017	-2.7724e-003	2.3789e-015	4.1630e-016	1.4508e-014
4.1393e-003	7.3697e-002	7.9822e-001	-1.0779e-015	2.8342e+000	-1.1204e-014	3.6075e-015	-1.4826e-011
7.4922e-018	3.0162e-016	1.2451e-015	2.9746e-003	-5.8812e-012	1.0095e+000	-4.6263e-002	-2.8326e+00
2.2947e-018	2.2158e-016	6.8981e-016	-2.5612e+00	-2.3075e-015	1.2848e-001	-2.2263e+00	-1.6631e-003

**Eigen Vector (Negative):**

-1.7264e-001	-1.8341e-001	2.5793e-002	-1.5129e-018	1.0081e-004	-2.9798e-016	-3.6908e-017	-5.2842e-016
3.7039e-003	1.5886e-002	2.9116e-001	-4.8566e-017	-5.4087e-003	-3.2412e-015	7.4768e-017	2.8298e-014
-1.3646e-017	-7.9418e-017	-6.2394e-016	-2.4721e-003	-1.1296e-014	-3.5143e-001	9.4374e-003	-5.4255e-003
-7.9291e-019	9.5767e-018	-6.7780e-018	1.4522e-001	-2.3737e-016	1.7437e-002	-1.9256e-001	-5.8852e-005
-5.4953e-002	8.5613e-003	-1.1981e-002	9.2489e-019	1.9433e-004	1.2677e-016	1.5110e-018	-1.0163e-015
1.0735e-003	4.5939e-003	8.4239e-002	2.7045e-016	-1.5630e-003	-6.4444e-016	-1.9759e-016	8.1460e-015
-1.9431e-018	-1.8801e-017	-1.3140e-016	-7.1634e-004	-3.2433e-015	-1.0167e-001	2.7290e-003	-1.5678e-003
2.7218e-019	4.6594e-017	1.3366e-016	2.0447e-002	-6.5969e-016	-8.6578e-003	1.3000e-002	-1.1148e-004

**NAT() from Equation (4.3.18):**

1.1243e+000	1.2684e+000	1.4467e+000	1.3021e+000	1.0266e+000	2.2826e+000	1.5411e+000	1.0259e+000
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## Ocean Tables

### TABLE-13

**Z (OC) = 1.0, S = 10    Wind Speed = 3m/Sec**

**Incident Direction = 0.5**

Separation Constants:

1.8952e-001	2.1855e-001	5.3389e-001	6.3794e001	2.2478e-001	2.1796e-001	5.4763e-001	6.3871e-001
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Eigen vector (positive):

-3.2778e+000	-5.0587e-001	2.8470e-001	-1.3960e-002	9.9754e-016	1.1312e-015	6.9030e-018	3.8343e-018
-4.7378e-001	3.6621e+000	-4.9951e-002	-5.5222e-002	-8.0609e-015	-8.1027e-015	3.9880e-018	2.1563e-017
-2.5104e-019	4.0346e-018	1.1334e-017	2.7018e-016	4.0912e+000	-3.5672e-001	-3.0182e-003	4.6591e-002
-1.6238e-018	2.6178e-017	7.4894e-017	1.7908e-015	3.6391e-001	-3.9685e+000	1.7579e-001	-1.6075e-003
-4.5378e-001	-1.6056e-001	-1.5187e+000	3.8024e-002	2.7822e-016	3.5808e-016	-3.3050e-017	-1.5782e-017
-2.3254e-002	9.8057e-002	3.7869e-002	1.5538e+000	-2.4147e-016	-3.7320e-017	-1.5337e-016	-2.5447e-016
4.7853e-019	-7.4319e-018	-1.6577e-017	-3.7784e-016	9.1654e-002	-1.0343e-002	2.9517e-003	-1.5575e+000
-1.0440e-019	1.6913e-018	4.9725e-018	1.1943e-016	3.6337e-002	-3.3385e-001	-1.5463e+000	2.9045e-003

Eigen vector (Negative):

-3.4655e-001	-4.4854e-002	-4.3776e-002	5.1910e-004	8.3133e-017	1.0062e-016	-8.6471e-019	-4.8215e-019
-3.0875e-002	1.8994e-001	1.5847e-002	1.1828e-002	-3.0393e-016	-4.3282e-016	-2.7105e-019	-7.5942e-018
-1.9978e-020	3.4243e-020	-4.6703e-018	-1.3054e-016	-1.7004e-001	1.2611e-002	-6.0765e-004	1.0345e-002
-5.8213e-020	-9.2614e-019	-3.3539e-017	-9.2422e-016	-1.4849e-002	1.3861e-001	-9.2228e-003	4.3390e-004
-1.2377e-001	-5.3023e-002	-3.3917e-002	-2.0444e-003	8.4387e-017	1.1861e-016	-3.6761e-019	9.9255e-019
-2.9964e-003	2.6824e-002	2.7852e-003	1.7352e-003	-6.8419e-017	2.8624e-017	-1.1863e-017	-2.1472e-019
2.6313e-019	-3.7027e-018	-1.6580e-018	-4.2797e-018	-2.3901e-002	.3219e-003	-6.2827e-005	1.5408e-003
3.2818e-021	-1.7309e-019	-2.4862e-018	-6.7327e-017	-8.3928e-004	-7.5497e-003	-8.3983e-003	1.0692e-004

NOC() from Equation (4.3.33):

1.3713e+000	1.6882e+000	3.9485e-001	4.0340e-001	2.0810e+000	1.9766e+000	4.0268e-001	4.0492e-00
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**TABLE-14**

**Z(OC)=1.0, S=100 Wind Speed = 3m/Sec**

**Incident Direction = 0.5**

Separation Constants:

1.3713e+000	2.1581e-001	5.2739e-001	6.3761e-001	2.2246e-001	2.1504e-001	5.4079e-001	6.3841e-001
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**Eigen vector (Positive):**

-3.2314e+000	-4.9718e-001	3.0197e-001	-1.4728e-002	-1.7861e-015	-1.4992e-015	-2.2353e-018	1.6466e-020
-4.6472e-001	3.6418e+000	-5.4384e-002	-5.9060e-002	1.4741e-014	1.0819e-014	-8.5718e-019	7.7096e-018
2.3127e-019	-3.9793e-018	-1.0584e-017	-2.5486e-016	4.1057e+000	-3.5064e-001	-3.3447e-003	5.0055e-002
1.3485e-018	-2.3280e-017	-6.3049e-017	-1.5230e-015	3.5875e-001	-3.9635e+000	1.8991e-001	-1.7211e-003
-4.7484e-001	-1.7128e-001	-1.5173e+000	3.8224e-002	-5.5916e-016	-5.1941e-016	1.0691e-017	-7.2465e-018
-2.4150e-002	1.0450e-001	3.8060e-002	1.5537e+000	4.3447e-016	2.6048e-016	1.6080e-017	1.5556e-016
-3.9376e-019	6.5265e-018	1.3715e-017	3.1450e-016	9.8871e-002	-1.0937e-002	3.0090e-003	-1.5575e+000
9.4803e-020	-1.6437e-018	-4.5559e-018	-1.1050e-016	3.8982e-002	-3.6031e-001	-1.5455e+000	2.9557e-003

**Eigen vector (Negative):**

-3.6582e-001	-4.7657e-002	-4.3991e-002	4.1858e-004	-1.6180e-016	-1.4461e-016	3.3159e-019	-2.4466e-019
-3.2127e-002	2.0415e-001	1.6859e-002	1.2477e-002	6.0129e-016	6.2636e-016	1.9810e-019	-4.9190e-018
1.8760e-020	-1.9556e-020	4.3943e-018	1.2501e-016	-1.8475e-001	1.3339e-002	-6.2442e-004	1.0994e-002
5.1071e-020	8.9557e-019	2.8400e-017	7.9619e-016	-1.5890e-002	1.4952e-001	-1.0694e-002	4.7555e-004
-1.2949e-001	-5.6470e-002	-3.4834e-002	-2.1858e-003	-1.7081e-016	-1.7238e-016	1.1799e-019	6.1058e-019
-3.0516e-003	2.8708e-002	2.9385e-003	1.8110e-003	1.1558e-016	6.1020e-017	1.3490e-018	-1.5598e-020
-2.2025e-019	3.2936e-018	1.4859e-018	4.3615e-018	-2.5877e-002	1.3783e-003	-5.8269e-005	1.6241e-003
-1.8124e-021	1.5650e-019	2.2538e-018	6.2204e-017	-8.5913e-004	-8.6635e-003	-8.9483e-003	1.0975e-004

**NOC() from Equation (4.3.33):**

1.3343e+000	1.6688e+000	3.9545e-001	4.0341e-001	2.0948e+000	1.9739e+000	4.0291e-001	4.0499e-001
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**TABLE-15**

**Z(OC)=1.0, S=10 Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.5**

1.6790e-001	2.0410e-001	5.0123e-001	6.3623e-001	2.1241e-001	2.0241e-001	5.1235e-001	6.3716e-001
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**Eigen vector (Positive):**

-3.0486e+000	-4.6053e-001	3.7086e-001	-1.7622e-002	1.8363e-016	7.7478e-017	3.0059e-017	-1.5681e-017
-4.3015e-001	3.5532e+000	-7.3807e-002	-7.4860e-002	-1.6885e-015	-5.6823e-016	7.1989e-018	-7.3461e-017
-3.3484e-019	7.6447e-018	1.6897e-017	4.2721e-016	4.1694e+000	-3.2529e-001	4.9127e-003	-6.4599e-002
-1.5677e-018	3.5944e-017	8.0884e-017	2.0530e-015	3.3780e-001	-3.9269e+000	-2.5071e-001	2.1888e-003
-5.5063e-001	-2.1427e-001	-1.5126e+000	3.8645e-002	7.8203e-017	3.8550e-017	-1.1598e-016	3.4295e-017
-2.7204e-002	1.3024e-001	3.8332e-002	1.5534e+000	-3.7983e-017	-1.0430e-016	-2.7656e-016	1.4287e-015
3.8770e-019	-8.4059e-018	-1.4336e-017	-3.3889e-016	1.2987e-001	-1.3155e-002	-3.2406e-003	1.5577e+000
-1.5531e-019	3.5635e-018	8.0434e-018	2.0429e-016	5.0091e-002	-4.7159e-001	1.5424e+000	-3.1643e-003

**Eigen vector (Negative):**

-4.3926e-001	-5.8568e-002	-4.1549e-002	-1.7190e-004	2.3410e-017	1.0017e-017	-2.9500e-018	-2.7386e-019
-3.6326e-002	2.6361e-001	2.0672e-002	1.4849e-002	-9.1609e-017	-4.3535e-017	5.6328e-019	1.5812e-017
-2.9485e-020	-7.1408e-020	-7.2473e-018	-2.2261e-016	-2.5023e-001	1.6050e-002	6.2429e-004	-1.3500e-002
-7.0713e-020	-1.8851e-018	-3.7487e-017	-1.1328e-015	-2.0196e-002	1.9540e-001	1.8309e-002	-6.6595e-004
-1.4962e-001	-7.0114e-002	-3.7297e-002	-2.7263e-003	2.3349e-017	1.3008e-017	-1.7585e-018	-2.4274e-018
-3.1247e-003	3.6379e-002	3.4690e-003	2.0455e-003	-4.1419e-018	-4.9127e-017	-3.0265e-017	8.7250e-019
2.3301e-019	-4.4970e-018	-2.1046e-018	-9.7002e-018	-3.4496e-002	1.5515e-003	1.8889e-005	-1.9161e-003
-5.8421e-021	-2.1353e-019	-3.7750e-018	-1.1379e-016	-8.7241e-004	-1.4228e-002	1.1013e-002	-1.1101e-004

**NOC() from Equation (4.3.33):**

1.1934e+000	1.5856e+000	3.9911e-001	4.0352e-001	2.1559e+000	1.9495e+000	4.0456e-001	4.0528e-001
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**TABLE-16****Z(OC)=1.0, S=100 Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.5**

1.6292e-001	6.3582e-001	4.9372e-001	2.0054e-001	2.0932e-001	1.9852e-001	5.0394e-001	6.3679e-001
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**Eigen vector (Positive):**

-2.9980e+000	-1.8388e-002	3.9045e-001	-4.4959e-001	-7.1066e-016	-2.7138e-016	-2.0937e-017	-1.4595e-017
-4.2086e-001	-7.9487e-002	-7.9840e-002	3.5260e+000	6.4721e-015	2.0239e-015	-2.7291e-018	-7.8015e-017
1.1481e-016	-1.5768e-016	2.1883e-016	-1.3959e-014	4.1894e+000	-3.1781e-001	5.4480e-003	-6.8942e-002
-6.5905e-018	-3.3555e-015	-1.3816e-016	-8.1003e-015	3.3175e-001	-3.9108e+000	-2.6932e-001	2.3255e-003
-5.6987e-001	3.8652e-002	-1.5115e+000	-2.2645e-001	-3.6551e-016	-1.4050e-016	7.7584e-017	2.7990e-017
-2.7935e-002	1.5534e+000	3.8249e-002	1.3751e-001	2.5944e-016	2.4549e-016	1.4398e-016	1.3818e-015
2.8661e-018	7.7181e-016	4.0248e-017	-4.4829e-016	1.3936e-001	-1.3731e-002	-3.3060e-003	1.5577e+000
-6.4224e-019	-3.3656e-016	-1.3400e-017	-1.0769e-015	5.3417e-002	-5.0456e-001	1.5415e+000	-3.2246e-003

**Eigen vector (Negative):**

-4.5911e-001	-3.9734e-004	-3.9843e-002	-6.1557e-002	-9.3778e-017	-3.7649e-017	1.9281e-018	-6.8611e-019
-3.7292e-002	1.5444e-002	2.1656e-002	2.8128e-001	3.7682e-016	1.6961e-016	-7.4832e-019	1.7131e-017
6.9867e-018	6.3684e-017	-1.0106e-016	6.1260e-016	-2.7101e-001	1.6750e-002	5.9816e-004	-1.4173e-002
-1.5447e-019	1.8806e-015	6.4835e-017	4.5768e-016	-2.1465e-002	2.0902e-001	2.1062e-002	-7.2782e-004
-1.5457e-001	-2.8670e-003	-3.7671e-002	-7.3925e-002	-1.1277e-016	-4.6895e-017	1.2408e-018	-1.9343e-018
-3.1042e-003	2.0884e-003	3.5883e-003	3.8589e-002	6.9256e-017	1.0992e-016	1.6908e-017	8.7174e-019
-1.0498e-018	3.2433e-018	-7.1329e-019	1.2266e-016	-3.7173e-002	1.5835e-003	-6.7838e-008	-1.9836e-003
-1.4454e-019	1.9781e-016	6.5944e-018	-2.4631e-017	-8.5350e-004	-1.6165e-002	1.1534e-002	-1.0768e-004

**NOC() from Equation (4.3.33):**

1.1558e+000	4.0358e-001	4.0050e-001	1.5604e+000	2.1751e+000	1.9380e+000	4.0527e-001	4.0536e-001
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**TABLE-17****Z(OC)=1.6, S=10 Wind Speed = 3m/Sec****Incident Direction = 0.5**

Separation Constants:

1.9228e-001	2.2029e-001	5.3811e-001	6.3815e-001	2.2625e-001	2.1980e-001	5.5200e-001	6.3890e-001
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Eigen vector (Positive):

-3.3078e+000	-5.1140e-001	2.7351e-001	-1.3453e-002	6.8380e-016	1.0066e-015	-3.7253e-018	7.2653e-019
-4.7972e-001	3.6749e+000	-4.7171e-002	-5.2762e-002	-5.9687e-015	-7.1527e-015	-2.2685e-018	8.3822e-019
-1.9816e-019	3.0522e-018	8.9644e-018	2.1264e-016	4.0821e+000	-3.6061e-001	-2.8190e-003	4.4386e-002
-2.0411e-018	3.1499e-017	9.3601e-017	2.2244e-015	3.6723e-001	-3.9709e+000	1.6687e-001	-1.5348e-003
-4.3967e-001	-1.5364e-001	-1.5196e+000	3.7875e-002	2.1304e-016	2.9021e-016	2.0347e-017	-5.5899e-018
-2.2644e-002	9.3889e-002	3.7722e-002	1.5539e+000	-2.0580e-016	3.6972e-016	-2.8129e-017	-5.2074e-019
2.7179e-019	-4.0475e-018	-9.3802e-018	-2.1292e-016	8.7090e-002	-9.9519e-003	2.9149e-003	-1.5574e+000
-1.4539e-019	2.2430e-018	6.6511e-018	1.5801e-016	3.4651e-002	-3.1705e-001	-1.5468e+000	2.8715e-003

Eigen vector (Negative):

-3.3387e-001	-4.3029e-002	-4.3467e-002	5.7454e-004	5.6557e-017	8.4116e-017	7.5014e-019	-1.1640e-019
-3.0020e-002	1.8089e-001	1.5186e-002	1.1398e-002	-2.1274e-016	-3.6443e-016	1.1451e-018	-3.7905e-019
-1.2310e-020	-1.7665e-020	-3.7993e-018	-1.0444e-016	-1.6083e-001	1.2131e-002	-5.9410e-004	9.9209e-003
-6.9492e-020	-1.0683e-018	-4.1805e-017	-1.1394e-015	-1.4182e-002	1.3168e-001	-8.3503e-003	4.0810e-004
-1.1993e-001	-5.0790e-002	-3.3256e-002	-1.9523e-003	6.8558e-017	9.5049e-017	1.8236e-019	3.6569e-019
-2.9526e-003	2.5615e-002	2.6826e-003	1.6829e-003	-6.4945e-017	2.1968e-016	-2.0350e-018	-7.5812e-021
1.4896e-019	-2.0187e-018	-9.4503e-019	-3.3709e-018	-2.2658e-002	1.2829e-003	-6.4873e-005	1.4851e-003
-5.6850e-021	-6.4730e-020	-2.9436e-018	-8.0344e-017	-8.2341e-004	-6.8828e-003	-8.0388e-003	1.0466e-00

NOC() from Equation (4.3.33):

1.3955e+000	1.7005e+000	3.9453e-001	4.0340e-001	2.0723e+000	1.9777e+000	4.0256e-001	4.0487e-001
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**TABLE-18**

**Z(OC)=1.6, S=100 Wind Speed = 3m/Sec**

**Incident Direction = 6.5**

Separation Constants:

1.8553e-001	2.1600e-001	5.2783e-001	6.3763e-001	2.2262e-001	2.1524e-001	5.4125e-001	6.3843e-001
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Eigen vector (Positive):

-3.2345e+000	-4.9777e-001	3.0081e-001	-1.4676e-002	1.1040e-015	9.5728e-016	-9.8705e-018	-4.4368e-018
-4.6533e-001	3.6432e+000	-5.4078e-002	-5.8799e-002	-8.7976e-015	-6.9266e-015	-5.0846e-018	-2.3922e-017
-9.4569e-020	1.6195e-018	4.3217e-018	1.0398e-016	4.1047e+000	-3.5105e-001	-3.3218e-003	4.9819e-002
-6.4832e-019	1.1140e-017	3.0281e-017	7.3095e-016	3.5910e-001	-3.9639e+000	1.8894e-001	-1.7134e-003
-4.7344e-001	-1.7056e-001	-1.5174e+000	3.8212e-002	3.2361e-016	3.2902e-016	4.5324e-017	1.9561e-017
-2.4091e-002	1.0407e-001	3.8048e-002	1.5537e+000	-2.6565e-016	-8.1693e-017	1.7998e-016	3.0301e-016
1.6883e-019	-2.7860e-018	-5.8787e-018	-1.3475e-016	9.8376e-002	-1.0897e-002	3.0051e-003	-1.5575e+000
-4.6776e-020	8.0627e-019	2.2289e-018	5.3960e-017	3.8801e-002	-3.5850e-001	-1.5456e+000	2.9522e-003

Eigen vector (Negative):

-3.6453e-001	-4.7468e-002	-4.3986e-002	4.2597e-004	9.7645e-017	9.1826e-017	1.2122e-018	3.5837e-019
-3.2045e-002	2.0318e-001	1.6791e-002	1.2434e-002	-3.5725e-016	-3.9952e-016	3.4769e-019	8.0752e-018
-7.7309e-021	9.5587e-021	-1.7907e-018	-5.0894e-017	-1.8374e-001	1.3290e-002	-6.2346e-004	1.0951e-002
-2.4384e-020	-4.2758e-019	-1.3637e-017	-3.8185e-016	-1.5819e-002	1.4877e-001	-1.0590e-002	4.7266e-004
-1.2911e-001	-5.6236e-002	-3.4776e-002	-2.1763e-003	9.6664e-017	1.0912e-016	5.3564e-019	-1.3347e-018
-3.0483e-003	2.8580e-002	2.9284e-003	1.8061e-003	-7.2391e-017	2.9362e-018	1.4939e-017	2.5267e-019
9.4270e-020	-1.4037e-018	-6.3070e-019	-1.7791e-018	-2.5741e-002	1.3747e-003	-5.8634e-005	1.6186e-003
1.7467e-022	-6.4175e-020	-1.0759e-018	-2.9777e-017	-8.5797e-004	-8.5848e-003	-8.9113e-003	1.0959e-004

NOC() from Equation (4.3.33):

1.3368e+000	1.6701e+000	3.9541e-001	4.0341e-001	2.0939e+000	1.9741e+000	4.0289e-001	4.0498e-001
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**TABLE-19****Z(OC)=1.6, S=10 Wind Speed = 5m/Sec****Separation Constants:****Incident Direction = 0.5**

1.7115e-001	2.0638e-001	5.0613e-001	6.3649e-001	2.1438e-001	2.0489e-001	5.1778e-001	6.3741e-001
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**Eigen vector (Positive):**

-3.0822e+000	-4.6758e-001	3.5803e-001	-1.7106e-002	-2.3551e-016	-1.4193e-016	2.1531e-017	-6.2158e-018
-4.3637e-001	3.5706e+000	-6.9980e-002	-7.1861e-002	2.4933e-015	1.0070e-015	5.7058e-018	-2.5783e-017
4.6196e-019	-9.9935e-018	2.2785e-017	-5.7022e-016	4.1568e+000	-3.3013e-001	-4.5853e-003	6.1805e-002
2.1295e-018	-4.6252e-017	-1.0735e-016	-2.6965e-015	3.4174e-001	-3.9360e+000	2.3884e-001	-2.1001e-003
-5.3749e-001	-2.0627e-001	-1.5134e+000	3.8613e-002	-1.3962e-016	-6.4785e-017	-8.6513e-017	2.5480e-017
-2.6695e-002	1.2546e-001	3.8345e-002	1.5535e+000	6.9785e-017	2.4250e-016	-2.0554e-016	2.5463e-016
-5.6649e-019	1.1671e-017	2.0631e-017	4.8455e-016	1.2383e-001	-1.2764e-002	3.1975e-003	-1.5577e+000
1.9701e-019	-4.2872e-018	-1.0034e-017	-2.5249e-016	4.7954e-002	-4.5027e-001	-1.5430e+000	3.1251e-003

**Eigen vector (Negative):**

-4.2602e-001	-5.6580e-002	-4.2417e-002	-3.8355e-005	-3.0026e-017	-1.7511e-017	-2.2456e-018	6.3370e-019
-3.5639e-002	2.5221e-001	1.9999e-002	1.4438e-002	1.2805e-016	7.2487e-017	1.4810e-019	8.8274e-018
4.0012e-020	6.7399e-020	9.7118e-018	2.9382e-016	-2.3717e-001	1.5573e-002	-6.3422e-004	1.3048e-002
9.3532e-020	2.2933e-018	4.9453e-017	1.4725e-015	-1.9376e-002	1.8660e-001	-1.6658e-002	6.2738e-004
-1.4620e-001	-6.7597e-002	-3.6978e-002	-2.6302e-003	-4.6896e-017	-2.1649e-017	-1.2407e-018	-2.2299e-018
-3.1284e-003	3.4937e-002	3.3823e-003	2.0112e-003	1.3802e-017	1.1636e-016	-2.1460e-017	2.8851e-019
-3.3587e-019	6.1722e-018	2.8695e-018	1.2309e-017	-3.2799e-002	1.5262e-003	-2.9220e-005	1.8677e-003
4.6214e-021	3.0010e-019	4.7829e-018	1.4147e-016	-8.7888e-004	-1.3048e-002	-1.0652e-002	1.1220e-004

**NOC() from Equation (4.3.33):**

1.2187e+000	1.6017e+000	3.9828e-001	4.0349e-001	2.1437e+000	1.9558e+000	4.0416e-001	4.0522e-001
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**TABLE-20**

**Z(OC)=1.6, S=100 Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.5**

1.6325e-001	2.0079e-001	4.9422e-001	6.3585e-001	2.0953e-001	1.9879e-001	5.0451e-001	6.3682e-001
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**Eigen vector (Positive):**

-3.0014e+000	-4.5033e-001	3.8913e-001	-1.8337e-002	1.1507e-016	4.4898e-017	-9.0115e-018	4.4282e-018
-4.2148e-001	3.5279e+000	-7.9427e-002	-7.9174e-002	-6.8434e-016	-3.3389e-016	-1.1588e-017	2.5095e-018
3.5681e-019	-8.8194e-018	-1.8811e-017	-4.8375e-016	4.1880e+000	-3.1831e-001	-5.4106e-003	6.8647e-003
2.0011e-018	-4.9611e-017	-1.0711e-016	-2.7621e-015	3.3216e-001	-3.9120e+000	2.6805e-001	-2.3162e-001
-5.6861e-001	-2.2564e-001	-1.5116e+000	3.8653e-002	3.2262e-018	2.7113e-017	3.3575e-017	-7.2754e-018
-2.7887e-002	1.3703e-001	3.8257e-002	1.5534e+000	-2.3711e-017	-1.5475e-016	7.3806e-017	-4.8072e-018
-2.2676e-019	5.2824e-018	8.4916e-018	2.0208e-016	1.3871e-001	-1.3693e-002	3.3016e-003	-1.5577e+000
2.3749e-019	-5.8583e-018	-1.2395e-017	-3.1816e-016	5.3191e-002	-5.0233e-001	-1.5415e+000	3.2205e-001

**Eigen vector (Negative):**

-4.5779e-001	-6.1358e-002	-3.9972e-002	-3.8135e-004	1.3902e-017	6.4602e-018	8.9351e-019	3.9627e-018
-3.7230e-002	2.8008e-001	2.1592e-002	1.5405e-002	-4.0249e-017	-2.6332e-017	3.3095e-018	-5.0396e-018
2.6859e-020	2.4740e-019	8.3706e-018	2.6132e-016	-2.6958e-001	1.6704e-002	-6.0037e-004	1.4129e-003
9.2074e-020	2.8462e-018	5.0153e-017	1.5486e-015	-2.1379e-002	2.0810e-001	-2.0867e-002	7.2354e-003
-1.5424e-001	-7.3670e-002	-3.7650e-002	-2.8578e-003	-4.6337e-018	9.4253e-018	5.3014e-019	4.1909e-018
-3.1061e-003	3.8440e-002	3.5808e-003	2.0859e-003	-5.6183e-018	-7.8013e-017	8.7258e-018	-2.8009e-018
-1.4261e-019	2.9701e-018	1.5597e-018	1.2069e-017	-3.6989e-002	1.5816e-003	-1.3363e-006	1.9793e-003
2.2417e-020	5.1565e-020	5.3224e-018	1.6748e-016	-8.5513e-004	-1.6029e-002	-1.1500e-002	1.0797e-003

**NOC() from Equation (4.3.33):**

1.1583e+000	1.5622e+000	4.0040e-001	4.0357e-001	2.1738e+000	1.9389e+000	4.0522e-001	4.0536e-001
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**TABLE-21****Z(OC)=1.0, S=100 Wind Speed = 3m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1727e-001	2.3502e-001	5.7747e-001	6.4003e-001	2.3853e-001	2.3510e-001	5.9033e-001	6.4051e-001
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Eigen vector (Positive):

-3.5778e+000	-5.5858e-001	1.6888e-001	-8.4828e-003	-3.5171e-015	1.6111e-014	1.2318e-017	-1.2952e-018
-5.3623e-001	3.7790e+000	-2.4637e-002	-3.0891e-002	2.7557e-014	-1.0941e-013	9.3708e-018	-1.0337e-017
3.1598e-020	-3.3153e-019	-1.5392e-018	-3.4930e-017	4.0071e+000	-3.9447e-001	1.3522e-003	-2.5297e-002
5.1884e-019	-5.4544e-018	-2.5868e-017	-5.8827e-016	3.9711e-001	-3.9694e+000	-9.2126e-002	8.9113e-004
-2.9091e-001	-9.0740e-002	-1.5303e+000	3.5805e-002	-5.0368e-016	2.6279e-015	-9.7735e-017	1.8711e-017
-1.5726e-002	5.5787e-002	3.5602e-002	1.5546e+000	4.7513e-016	-2.2710e-015	-5.2557e-016	-1.6545e-016
-1.4975e-019	1.5451e-018	5.8486e-018	1.2973e-016	4.8575e-002	-6.1510e-003	-2.5897e-003	1.5570e+000
1.5500e-020	-1.6397e-019	-8.2978e-019	-1.8985e-017	1.9968e-002	-1.7467e-001	1.5510e+000	-2.5761e-003

Eigen vector (Negative):

-2.0963e-001	-2.5945e-002	-3.4549e-002	7.5130e-004	-1.5452e-016	7.4784e-016	-2.1685e-018	4.6233e-019
-2.0435e-002	1.0259e-001	8.9776e-003	7.1372e-003	5.4120e-016	-2.9471e-015	-1.6321e-018	5.2701e-018
2.2611e-021	-1.0748e-020	6.0716e-019	1.5264e-017	-8.6284e-002	7.4712e-003	4.0007e-004	-5.9575e-003
1.1087e-020	9.7493e-020	1.1281e-017	2.8047e-016	-8.2816e-003	7.2855e-002	2.7491e-003	-2.0745e-004
-7.9022e-002	-3.0250e-002	-2.4452e-002	-1.1127e-003	-1.5781e-016	8.7669e-016	-5.3830e-019	-6.9246e-019
-2.2322e-003	1.4847e-002	1.6530e-003	1.1054e-003	1.3624e-016	-7.3330e-016	-2.1615e-017	-8.7895e-021
-7.4105e-020	7.1789e-019	3.1381e-019	2.9612e-019	-1.2378e-002	8.4607e-004	5.8494e-005	-9.2566e-004
-2.1670e-021	2.9197e-020	4.6276e-019	1.1241e-017	-5.8448e-004	-2.4552e-003	4.7026e-003	-7.1951e-005

NOC: () from Equation (4.3.33):

1.6238e+000	1.8022e+000	3.9421e-001	4.0349e-001	2.0016e+000	1.9692e+000	4.0235e-001	4.0448e-001
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## TABLE-22

Z(OC)=1.0, S=100    **Wind Speed = 3m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1442e-001	2.3342e-001	5.7283e-001	6.3982e-001	2.3721e-001	2.3347e-001	5.8606e-001	6.4033e-001
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**Eigen vector (Positive):**

-3.5478e+000	-5.5345e-001	1.8119e-001	-9.0858e-003	-4.9031e-016	3.3496e-015	-1.1798e-017	-4.2804e-018
-5.2960e-001	3.7682e+000	-2.6975e-002	-3.3357e-002	4.2364e-015	-2.2940e-014	-8.1109e-018	-1.7391e-017
-3.9076e-020	4.2784e-019	1.8547e-018	-4.2257e 017	-4.0150e+000	3.9071e-001	-1.4930e-003	2.7401e-002
-3.2226e-019	3.5356e-018	1.5642e-017	3.5716e-016	-3.9371e-001	3.9714e+000	1.0015e-001	-9.6330e-004
-3.0994e-001	-9.7927e-002	-1.5288e+000	3.6107e-002	-1.0001e-016	5.8183e-016	8.6903e-017	1.7279e-017
-1.6657e-002	6.0163e-002	3.5910e-002	1.5545e+000	1.5817e-017	1.4228e-016	4.6403e-016	7.0876e-016
1.5264e-019	-1.6408e-018	-5.7832e-018	-1.2852e-016	-5.2737e-002	6.6061e-003	2.6259e-003	-1.5570e+000
-7.6949e-021	8.5769e-020	4.3802e-019	1.0141e-017	-2.1598e-002	1.9002e-001	-1.5505e+000	2.6096e-003

**Eigen vector (Negative):**

-2.2470e-001	-2.7938e-002	-3.6136e-002	7.6022e-004	-2.4489e-017	1.6876e-016	2.0269e-018	3.9867e-019
-2.1707e-002	1.1121e-001	9.6969e-003	7.6539e-003	9.0551e-017	-6.7675e-016	1.1803e-018	4.4621e-018
-2.7869e-021	1.2398e-020	-7.3601e-019	-1.8694e-017	9.4075e-002	-8.0280e-003	-4.2719e-004	6.4188e-003
-7.4770e-021	-6.8049e-020	-6.8307e-018	-1.7156e-016	8.9449e-003	-7.9212e-002	-3.2049e-003	2.2763e-004
-8.4264e-002	-3.2618e-002	-2.5738e-002	-1.2075e-003	-3.3909e-017	1.9268e-016	5.2586e-019	-5.8839e-019
-2.3458e-003	1.6057e-002	1.7776e-003	1.1800e-003	-6.4055e-018	1.3920e-016	2.0711e-017	2.5886e-019
7.6345e-020	-7.6730e-019	-3.3607e-019	-3.6984e-019	1.3470e-002	-9.0288e-004	-6.1077e-005	9.9371e-004
2.7104e-021	-3.3351e-020	-3.0482e-019	-7.3355e-018	6.1954e-004	2.8281e-003	-5.0851e-003	7.6604e-005

**NOC: () from Equation (4.3.33):**

1.5974e+000	1.7915e+000	3.9399e-001	4.0347e-001	2.0091e+000	1.9716e+000	4.0230e-001	4.0452e-001
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**TABLE-23** **$Z(OC)=1.0, S=10$  Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1345e-001	2.3287e-001	5.7126e-001	6.3974e-001	2.3676e-001	2.3291e-001	5.8460e-001	6.4027e-001
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**Eigen vector (Positive):**

-3.5375e+000	-5.5169e-001	1.8535e-001	-9.2886e-003	-1.6310e-015	1.9276e-014	-3.2651e-018	1.2563e-018
-5.2735e-001	3.7645e+000	-2.7783e-002	-3.4196e-002	1.2508e-014	-1.3171e-013	-2.1374e-018	4.7042e-018
1.8828e-019	-2.0916e-018	-8.8690e-018	-2.0235e-016	4.0178e+000	-3.8943e-001	1.5422e-003	-2.8120e-002
2.1474e-018	-2.3906e-017	-1.0344e-016	-2.3652e-015	3.9255e-001	-3.9720e+000	-1.0290e-001	9.8789e-004
-3.1628e-001	-1.0037e-001	-1.5283e+000	3.6206e-002	-2.6252e-016	3.4961e-015	2.4541e-017	-1.6900e-017
-1.6965e-002	6.1648e-002	3.6012e-002	1.5544e+000	1.8328e-016	-1.8696e-015	9.1212e-017	2.0798e-016
-7.3296e-019	7.9895e-018	2.7520e-017	6.1203e-016	5.4164e-002	-6.7596e-003	-2.6382e-003	1.5570e+000
6.8056e-020	-7.6388e-019	-3.5644e-018	-8.2136e-017	2.2154e-002	-1.9528e-001	1.5504e+000	-2.6210e-003

**Eigen vector (Negative):**

-2.2977e-001	-2.8614e-002	-3.6641e-002	7.6157e-004	-7.8345e-017	9.9887e-016	5.8891e-019	-5.2892e-019
-2.2129e-002	1.1415e-001	9.9411e-003	7.8279e-003	2.7500e-016	-3.9849e-015	4.4339e-019	-3.0734e-018
1.3443e-020	-5.8494e-020	3.5256e-018	8.9863e-017	-9.6761e-002	8.2159e-003	4.3618e-004	-6.5751e-003
5.0585e-020	4.7776e-019	4.5215e-017	1.1395e-015	-9.1708e-003	8.1392e-002	3.3694e-003	-2.3464e-004
-8.6010e-002	-3.3421e-002	-2.6157e-002	-1.2398e-003	-8.2052e-017	1.1628e-015	1.4782e-019	7.0323e-019
-2.3825e-003	1.6470e-002	1.8196e-003	1.2048e-003	4.3054e-017	-4.4198e-016	4.1843e-018	3.8174e-020
-3.6790e-019	3.7443e-018	1.6402e-018	1.8707e-018	-1.3845e-002	9.2181e-004	6.1863e-005	-1.0166e-003
-1.1287e-020	1.5879e-019	2.0606e-018	5.0478e-017	-6.3103e-004	-2.9620e-003	5.2153e-003	-7.8139e-005

**NOC() from Equation (4.3.33):**

1.5884e+000	1.7878e+000	3.9394e-001	4.0347e-001	2.0116e+000	1.9724e+000	4.0229e-001	4.0454e-001
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**TABLE-24****Z(OC)=1.0, S=100 Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1036e-001	2.3111e-001	5.6630e-001	6.3952e-001	2.3530e-001	2.3110e-001	5.7994e-001	6.4008e-001
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**Eigen vector (Positive):**

-3.5044e+000	-5.4605e-001	1.9852e-001	-9.9276e-003	6.5528e-016	1.7889e-014	1.0107e-017	1.2120e-018
-5.2021e-001	3.7524e+000	-3.0403e-002	-3.6876e-002	-5.2295e-015	-1.2283e-013	6.3867e-018	1.2518e-017
-8.9307e-020	1.0392e-018	4.1146e-018	9.4293e-017	4.0266e+000	-3.8532e-001	1.7038e-003	-3.0425e-002
-1.0619e-018	1.2386e-017	5.0103e-017	1.1511e-015	3.8887e-001	-3.9735e+000	-1.1177e-001	1.0665e-003
-3.3606e-001	-1.0815e-001	-1.5269e+000	3.6508e-002	1.5199e-016	3.5440e-015	-6.8232e-017	-9.0906e-018
-1.7914e-002	6.6377e-002	3.6321e-002	1.5544e+000	-7.6443e-017	-2.2921e-015	-3.4675e-016	-1.0651e-016
3.4187e-019	-3.8972e-018	-1.2524e-017	-2.7918e-016	5.8755e-002	-7.2447e-003	-2.6778e-003	1.5571e+000
-3.8576e-020	4.5321e-019	1.9494e-018	4.5092e-017	2.3935e-002	-2.1225e-001	1.5499e+000	-2.6573e-003

**Eigen vector (Negative):**

-2.4574e-001	-3.0757e-002	-3.8136e-002	7.6013e-004	3.4122e-017	1.0078e-015	-1.6781e-018	-1.5981e-019
-2.3435e-002	1.2360e-001	1.0718e-002	8.3763e-003	-1.2487e-016	-4.0491e-015	-8.0292e-019	-5.0128e-018
-6.7933e-021	3.0303e-020	-1.6295e-018	-4.2058e-017	-1.0545e-001	8.8100e-003	4.6398e-004	-7.0718e-003
-2.6770e-020	-2.7034e-019	-2.1953e-017	-5.5936e-016	-9.8924e-003	8.8413e-002	3.9272e-003	-2.5747e-004
-9.1461e-002	-3.5977e-002	-2.7433e-002	-1.3433e-003	5.1575e-017	1.1791e-015	-4.6459e-019	3.8550e-019
-2.4928e-003	1.7788e-002	1.9523e-003	1.2824e-003	-1.6481e-017	-6.3837e-016	-1.7235e-017	-8.0455e-020
1.7350e-019	-1.8384e-018	-8.0280e-019	-9.4820e-019	-1.5057e-002	9.8081e-004	6.4044e-005	-1.0889e-003
4.9337e-021	-7.8795e-020	-1.0795e-018	-2.6806e-017	-6.6620e-004	-3.4130e-003	5.6300e-003	-8.2870e-005

**NOC() from Equation (4.3.33):**

1.5598e+000	1.7758e+000	3.9380e-001	4.0345e-001	2.0199e+000	1.9745e+000	4.0227e-001	4.0459e-001
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**TABLE-25****Z=1.6, S=10 Wind Speed = 3m/Sec****Incident Direction = 0.866**

Separation Constants:

2.1908e-001	2.3602e-001	5.8044e-001	6.4016e-001	2.3935e-001	2.3612e-001	5.9302e-001	6.4062e-001
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**Eigen vector (Positive):**

-3.5966e+000	-5.6179e-001	1.6103e-001	-8.0964e-003	1.0796e-015	-3.6277e-015	-9.5038e-019	2.0503e-018
-5.4044e-001	3.7857e+000	-2.3187e-002	-2.9334e-002	-8.1407e-015	2.4579e-014	-6.5865e-019	6.9658e-018
1.4518e-019	-1.4838e-018	-7.2638e-018	-1.6455e-016	-4.0021e+000	3.9683e-001	-1.2662e-003	2.3974e-002
2.3909e-018	-2.4469e-017	-1.2165e-016	-2.7596e-015	-3.9926e-001	3.9680e+000	8.7113e-002	-8.4561e-004
-2.7857e-001	-8.6193e-002	-1.5312e+000	3.5605e-002	1.3270e-016	-5.4401e-016	7.5886e-018	-8.1251e-018
-1.5116e-002	5.3015e-002	3.5399e-002	1.5546e+000	-8.6861e-017	-3.9294e-017	6.7955e-017	-4.4100e-016
-5.3816e-019	5.4107e-018	2.1486e-017	4.7603e-016	-4.5969e-002	5.8604e-003	2.5669e-003	-1.5569e+000
7.3668e-020	-7.5709e-019	-3.9409e-018	-8.9773e-017	-1.8941e-002	1.6508e-001	-1.5513e+000	2.5550e-003

**Eigen vector (Negative):**

-1.9996e-001	-2.4678e-002	-3.3465e-002	7.4183e-004	4.3886e-017	-1.5877e-016	1.3984e-019	-1.3732e-019
-1.9605e-002	9.7179e-002	8.5221e-003	6.8064e-003	-1.5147e-016	6.2684e-016	-8.1530e-023	-1.3342e-018
8.2303e-021	-2.8963e-020	2.9467e-018	7.3346e-017	8.1438e-002	-7.1159e-003	-3.8243e-004	5.6646e-003
4.8533e-020	4.1414e-019	5.2997e-017	1.3094e-015	7.8628e-003	-6.8880e-002	-2.4818e-003	1.9500e-004
-7.5627e-002	-2.8750e-002	-2.3596e-002	-1.0530e-003	4.0151e-017	-1.8011e-016	4.1211e-020	2.3588e-019
-2.1558e-003	1.4084e-002	1.5734e-003	1.0572e-003	-1.7064e-017	-8.5650e-017	2.6429e-018	-1.3560e-019
-2.6490e-019	2.5079e-018	1.1128e-018	1.3675e-018	1.1696e-002	-8.0928e-004	-5.6662e-005	8.8213e-004
-6.8133e-021	9.7856e-020	2.0595e-018	5.0029e-017	5.6136e-004	2.2349e-003	-4.4609e-003	6.8908e-005

**NOC() from Equation (4.3.33):**

1.6404e+000	1.8089e+000	3.9438e-001	4.0351e-001	1.9970e+000	1.9675e+000	4.0238e-001	4.0445e-001
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**TABLE-26****Z(OC)=1.6, S=100 Wind Speed = 3m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1461e-001	2.3353e-001	5.7314e-001	6.3983e-001	2.3730e-001	2.3358e-001	5.8635e-001	6.4035e-001
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**Eigen vector (Positive):**

-3.5498e+000	-5.5381e-001	1.8035e-001	-9.0448e-003	-3.1221e-015	2.5262e-014	-2.6726e-018	-2.9931e-018
-5.3005e-001	3.7690e+000	-2.6812e-002	-3.3187e-002	2.4698e-014	-1.7230e-013	-1.5495e-018	-1.0747e-017
2.1733e-020	-2.3729e-019	-1.0348e-018	-2.3573e-017	4.0145e+000	-3.9097e-001	1.4831e-003	-2.7256e-002
2.8152e-019	-3.0796e-018	-1.3688e-017	-3.1246e-016	3.9394e-001	-3.9713e+000	-9.9592e-002	9.5834e-004
-3.0865e-001	-9.7434e-002	-1.5289e+000	3.6087e-002	-5.0575e-016	4.4444e-015	1.9891e-017	1.7782e-017
-1.6595e-002	5.9863e-002	3.5890e-002	1.5545e+000	4.1548e-016	-2.8998e-015	1.0554e-016	3.3805e-016
-8.3843e-020	8.9868e-019	3.1823e-018	7.0711e-017	5.2450e-002	-6.5750e-003	-2.6234e-003	1.5570e+000
9.1603e-021	-1.0086e-019	-4.7700e-019	-1.0957e-017	2.1486e-002	-1.8896e-001	1.5506e+000	-2.6073e-003

**Eigen vector (Negative):**

-2.2368e-001	-2.7802e-002	-3.6032e-002	7.5985e-004	-1.4839e-016	1.2673e-015	4.5653e-019	4.0694e-019
-2.1622e-002	1.1061e-001	9.6476e-003	7.6187e-003	5.2468e-016	-5.0363e-015	1.5148e-019	3.2269e-018
1.4782e-021	-6.1417e-021	4.1337e-019	1.0483e-017	-9.3536e-002	7.9900e-003	4.2536e-004	-6.3872e-00
6.4345e-021	5.9655e-020	5.9793e-018	1.5006e-016	-8.8993e-003	7.8773e-002	3.1723e-003	-2.2623e-004
-8.3909e-002	-3.2456e-002	-2.5652e-002	-1.2010e-003	-1.6047e-016	1.4800e-015	1.1933e-019	-6.5117e-019
-2.3383e-003	1.5974e-002	1.7691e-003	1.1749e-003	1.1195e-016	-8.0587e-016	4.6842e-018	1.3313e-019
-4.1915e-020	4.2021e-019	1.8458e-019	2.1454e-019	-1.3394e-002	8.9904e-004	6.0912e-005	-9.8908e-004
-1.2035e-021	1.7411e-020	2.6398e-019	6.4690e-018	-6.1719e-004	-2.8016e-003	5.0589e-003	-7.6291e-005

**NOC() from Equation (4.3.33):**

1.5992e+000	1.7923e+000	3.9401e-001	4.0347e-001	2.0086e+000	1.9715e+000	4.0230e-001	4.0452e-001
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**TABLE-27****Z(OC)=1.6, S=10 Wind Speed = 5m/Sec**

Separation Constants:

**Incident Direction = 0.866**

2.1541e-001	2.3398e-001	5.7443e-001	6.3989e-001	2.3767e-001	2.3404e-001	5.8754e-001	6.4040e-001
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**Eigen vector (Positive):**

-3.5582e+000	-5.5524e-001	1.7693e-001	-8.8776e-003	2.1435e-015	-1.4037e-014	-8.0510e-018	5.8931e-019
-5.3190e-001	3.7720e+000	-2.6156e-002	-3.2500e-002	-1.7212e-014	9.5643e-014	-7.0937e-018	6.4391e-018
-3.2730e-020	3.5321e-019	1.5731e-018	3.5805e-017	4.0122e+000	-3.9202e-001	1.4434e-003	-2.6668e-002
-2.6478e-019	2.8621e-018	1.2963e-017	2.9557e-016	3.9489e-001	-3.9708e+000	-9.7348e-002	9.3821e-004
-3.0340e-001	-9.5432e-002	-1.5293e+000	3.6004e-002	3.7566e-016	-2.4185e-015	6.0332e-017	-4.5139e-018
-1.6339e-002	5.8644e-002	3.5805e-002	1.5545e+000	-2.9160e-016	1.6963e-015	3.5990e-016	-5.5274e-017
1.0859e-019	-1.1507e-018	-4.1535e-018	-9.2239e-017	5.1286e-002	-6.4486e-003	-2.6133e-003	1.5570e+000
-6.8824e-021	7.5285e-020	3.8171e-019	8.7979e-018	2.1031e-002	-1.8466e-001	1.5507e+000	-2.5980e-003

**Eigen vector (Negative):**

-2.1949e-001	-2.7247e-002	-3.5602e-002	7.5797e-004	9.9975e-017	-6.8838e-016	1.3549e-018	-9.4610e-020
-2.1271e-002	1.0821e-001	9.4473e-003	7.4753e-003	-3.5718e-016	2.7296e-015	1.2913e-018	-2.6053e-018
-2.0437e-021	7.4810e-021	-6.3484e-019	-1.6031e-017	-9.1352e-002	7.8353e-003	4.1789e-004	-6.2588e-003
-5.9772e-021	-5.3692e-020	-5.6579e-018	-1.4160e-016	-8.7144e-003	7.6994e-002	3.0419e-003	-2.2055e-004
-8.2461e-002	-3.1796e-002	-2.5300e-002	-1.1745e-003	1.2325e-016	-8.0610e-016	3.5681e-019	1.6659e-019
-2.3073e-003	1.5637e-002	1.7345e-003	1.1543e-003	-8.0050e-017	4.9358e-016	1.5625e-017	-3.7118e-020
5.4166e-020	-5.3752e-019	-2.3785e-019	-3.1090e-019	-1.3088e-002	8.8335e-004	6.0225e-005	-9.7019e-004
1.8351e-021	-2.2932e-020	-2.4553e-019	-5.9278e-018	-6.0757e-004	-2.6952e-003	4.9523e-003	-7.5011e-005

**NOC() from Equation (4.3.33):**

1.6065e+000	1.7953e+000	3.9406e-001	4.0348e-001	2.0065e+000	1.9708e+000	4.0232e-001	4.0451e-001
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**TABLE-28****Z(OC)=1.6, S=100 Wind Speed = 5m/Sec****Incident Direction = 0.866**

Separation Constants:

2.1057e-001	2.3124e-001	5.6664e-001	6.3953e-001	2.3540e-001	2.3122e-001	5.8026e-001	6.4009e-001
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Eigen vector (Positive):

-3.5067e+000	-5.4644e-001	1.9762e-001	9.8842e-003	1.0084e-015	-4.4667e-014	4.6141e-019	-2.3260e-018
-5.2070e001	3.7532e+000	-3.0221e-002	3.6692e-002	-7.2581e-015	3.0686e-013	1.2113e-017	-1.3644e-018
3.8378e-019	-4.4612e-018	-1.8091e-017	4.1539e-016	4.0260e+000	3.8561e-001	-1.6925e-003	3.0267e-002
-2.1536e022	2.6242e-021	1.5008e-020	-3.5608e-019	3.8912e-001	3.9735e+000	1.1116e-001	-1.0611e-003
-3.3473e001	-1.0762e-001	1.5270e+000	-3.6488e-002	9.9926e-017	-8.8140e-015	-4.6749e-018	1.4706e-017
1.7850e-002	6.6053e-002	3.6301e-002	1.5544e+000	-1.1109e-016	5.2293e-015	4.7784e-018	1.7228e-016
2.5849e-021	-3.1497e-020	-1.8013e-019	4.2739e-018	5.8439e-002	7.2117e-003	2.6751e-003	1.5571e+000
1.3355e-022	-1.6273e-021	-9.3067e-021	2.2081e-019	2.3812e-002	2.1108e-001	1.5499e+000	2.6548e-003

Eigen vector (Negative):

-2.4466e-001	-3.0611e-002	-3.8039e-002	-7.6051e-004	5.1728e-017	-2.5028e-015	-1.2466e-019	3.4931e-019
-2.3347e-002	1.2295e-001	1.0665e-002	-8.3390e-003	-1.7283e-016	1.0060e-014	-4.9158e-018	-2.6706e-019
1.1451e-020	7.5651e-020	7.8557e-018	-2.0023e-016	-1.0485e-001	-8.7696e-003	-4.6212e-004	7.0379e-003
2.1536e-022	-2.6242e-021	-1.5008e-020	3.5608e-019	-9.8429e-003	-8.7929e-002	-3.8874e-003	2.5588e-004
-9.1093e-002	-3.5802e-002	-2.7349e-002	1.3362e-003	2.2541e-017	-2.9341e-015	-2.3842e-020	-6.1133e-019
-2.4856e-003	1.7697e-002	1.9433e-003	-1.2772e-003	-2.5458e-017	1.3667e-015	1.8772e-019	5.8364e-020
-2.5849e-021	3.1497e-020	1.8013e-019	-4.2739e-018	-1.4973e-002	-9.7684e-004	-6.3911e-005	1.0840e-003
-1.3355e-022	1.6273e-021	9.3067e-021	-2.2081e-019	-6.6387e-004	3.3809e-003	-5.6016e-003	8.2554e-005

NOC() from Equation (4.3.33):

1.5618e+000	1.7767e+000	3.9381e-001	4.0345e-001	2.0193e+000	1.9743e+000	4.0227e-001	4.0458e-001
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Following tables represents the values of individual stokes parameters for directions given in the first column of the table number (29-33). The corresponding equation for this calculation is (4.8.9). However the integrals involved in the above mentioned equation is evaluated from expression (4.11.1) and using individual expressions from (4.11.2-4.11.10). The source functions for atmosphere and ocean are calculated from equations (2.12.15a-2.12.15d) and (2.12.19a-2.12.19d). Specular Reflection and Transmission functions are calculated from equations (2.10.6) and (2.10.7) with specific forms given by equations (2.10.8-2.10.11) for two quadrature angles and refractive index of water as 1.34. In bottom boundary condition (4.7.49) the functions  $g(\mu)$  has been calculated from (4.7.49a). We have chosen initial direction of incident beam ( $\mu_0$ ) as 0.74176. Optical depth corresponding to the bottom of the ocean surface is set as  $Z_1=2.0$ . The interface optical depth is set at  $Z_w$  as 1.0.

**Table 29**

$Z(OC)=1.1$

Direction	L	Q	U	V
0.043633	3.9736	-0.45999	7.007	0.40979
0.07854	4.0324	-0.45999	7.2183	0.41113
0.11345	4.1354	-0.50868	7.4286	0.41501
0.14835	4.2339	-0.54337	7.6068	0.4173
0.18326	4.3054	-0.57454	7.7131	0.41521
0.21817	4.3379	-0.59883	7.7253	0.40729
0.25307	4.3292	-0.61483	7.641	0.39357
0.28798	4.2832	-0.62245	7.4705	0.37481
0.32289	4.206	-0.62223	7.2286	0.35208
0.3927	3.9849	-0.60159	6.5916	0.29856
0.42761	3.8523	-0.5828	6.2222	0.2693
0.46251	3.7112	-0.55932	5.8327	0.2391
0.53233	3.4162	-0.50053	5.0219	0.17724
0.60214	3.1194	-0.42882	4.2024	0.11469
0.63705	2.9741	-0.38889	3.7978	0.083393
0.67195	2.8322	-0.34648	3.3996	0.052125
0.70686	2.6954	-0.30118	3.0091	0.02087
0.74176	2.5441	-0.2454	2.6281	-0.010292
0.77667	2.4288	-0.21483	2.552	-0.041794
0.81158	2.3024	-0.16345	1.8935	-0.073176

**Table 30****Z(OC)=1.3**

<b>Mu1</b>	<b>L</b>	<b>Q</b>	<b>U</b>	<b>V</b>
0.043633	11.622	-3.2546	-9.2975	-0.66569
0.07854	5.0627	-0.78343	-9.564	-0.71276
0.11345	4.9832	-0.74425	-9.7951	-0.75858
0.14835	5.0282	-0.76437	-9.9092	-0.7965
0.18326	5.0323	-0.78273	-9.8658	-0.82258
0.21817	4.9778	-0.79077	-9.6713	-0.83578
0.25307	4.8724	-0.78793	-9.3553	-0.83715
0.28798	4.7289	-0.77563	-8.9503	-0.82844
0.32289	4.5592	-0.75559	-8.4851	-0.81137
0.3927	4.1785	-0.69821	-7.4582	-0.75806
0.42761	3.9802	-0.66309	-6.9253	-0.72408
0.46251	3.7824	-0.62476	-6.3924	-0.68636
0.53233	3.398	-0.54055	-5.3478	-0.60206
0.60214	3.0384	-0.4486	-4.3528	-0.50878
0.63705	2.8695	-0.40025	-3.8778	-0.45952
0.67195	2.7086	-0.35036	-3.4189	-0.4088
0.70686	2.5571	-0.29825	-2.9759	-0.35676
0.74176	2.3872	-0.23409	-2.5485	-0.30342
0.77667	2.2685	-0.20431	-2.1387	-0.24941
0.81158	2.1352	-0.14805	-1.7427	-0.19411



**Table 31****Z(OC)=1.5**

<b>Mu1</b>	<b>L</b>	<b>Q</b>	<b>U</b>	<b>V</b>
0.043633	676.09	-264.26	10.672	0.8293
0.07854	9.6494	-2.5026	10.977	0.88013
0.11345	6.4641	-1.2009	11.098	0.91797
0.14835	6.0925	-1.0776	10.951	0.93523
0.18326	5.8555	-1.0345	10.584	0.93419
0.21817	5.5968	-0.9965	10.074	0.91993
0.25307	5.3145	-0.95435	9.4857	0.89697
0.28798	5.021	-0.90797	8.8628	0.86855
0.32289	4.7271	-0.85858	8.236	0.83686
0.3927	4.1638	-0.75471	7.0099	0.76888
0.42761	3.9009	-0.70149	6.4317	0.73407
0.46251	3.6525	-0.6479	5.8799	0.69928
0.53233	3.1996	-0.54013	4.8567	0.6305
0.60214	2.8029	-0.43194	3.9369	0.56341
0.63705	2.6241	-0.37758	3.5128	0.53055
0.67195	2.4575	-0.32279	3.1108	0.49815
0.70686	2.3043	-0.26649	2.7294	0.46617
0.74176	2.1264	-0.19623	2.3683	0.43477
0.77667	2.0183	-0.17129	2.0226	0.40317
0.81158	1.8897	-0.11268	1.6961	0.37231

**Table 32**

**Z(OC)=1.7**

<b>Mu1</b>	<b>L</b>	<b>Q</b>	<b>U</b>	<b>V</b>
0.043633	64171	-26077	15.26	0.113
0.07854	54.235	-21.313	15.22	0.27993
0.11345	9.7642	-2.4835	14.489	0.41584
0.14835	7.1221	-1.4572	13.408	0.5167
0.18326	6.2353	-1.2076	12.237	0.58802
0.21817	5.6214	-1.0727	11.097	0.63624
0.25307	5.1083	-0.97014	10.037	0.66673
0.28798	4.5407	-0.85873	8.8063	0.68636
0.32289	4.2616	-0.80304	8.1875	0.68986
0.3927	3.5898	-0.6625	6.6687	0.67922
0.42761	3.3049	-0.59861	6.0123	0.66535
0.46251	3.0484	-0.53795	5.4141	0.64728
0.53233	2.6071	-0.42397	4.3649	0.60156
0.60214	2.244	-0.31703	3.4763	0.54695
0.63705	2.0865	-0.26528	3.0813	0.51738
0.67195	1.9432	-0.21405	2.7147	0.48678
0.70686	1.8151	-0.16181	2.3734	0.45544
0.74176	1.6508	-0.093047	2.056	0.42386
0.77667	1.5782	-0.082573	1.7557	0.39138
0.81158	1.4747	-0.029244	1.4771	0.35963

**Table 33****Z(OC)=1.9**

Mu1	L	Q	U	V
0.043633	6.1442e+006	-25633e+006	16.322	1.2049
0.07854	592.75	-258.05	12.939	0.99231
0.11345	21.152	-8.2225	10.337	0.82686
0.14835	6.6629	-1.8781	8.4648	0.70872
0.18326	4.3801	-0.99815	7.0815	0.6227
0.21817	3.4801	-0.71372	6.0246	0.55819
0.25307	2.9401	-0.56604	5.1926	0.50848
0.28798	2.5545	-0.46742	4.5203	0.46925
0.32289	2.2565	-0.3923	3.9657	0.4377
0.3927	1.8175	-0.2777	3.103	0.3906
0.42761	1.6499	-0.23075	2.7604	0.37274
0.46251	1.507	-0.18819	2.4615	0.35766
0.53233	1.2765	-0.11213	1.9644	0.3338
0.60214	1.1005	-0.04395	1.5674	0.31608
0.63705	1.0281	-0.011615	1.3973	0.30893
0.67195	0.96448	-0.020319	1.2428	0.30269
0.70686	0.91184	-0.053804	1.1017	0.29725
0.74176	0.80206	-0.10771	0.97378	0.29278
0.77667	0.80857	-0.088427	0.85139	0.28792
0.81158	0.76599	-0.12412	0.74219	0.28429