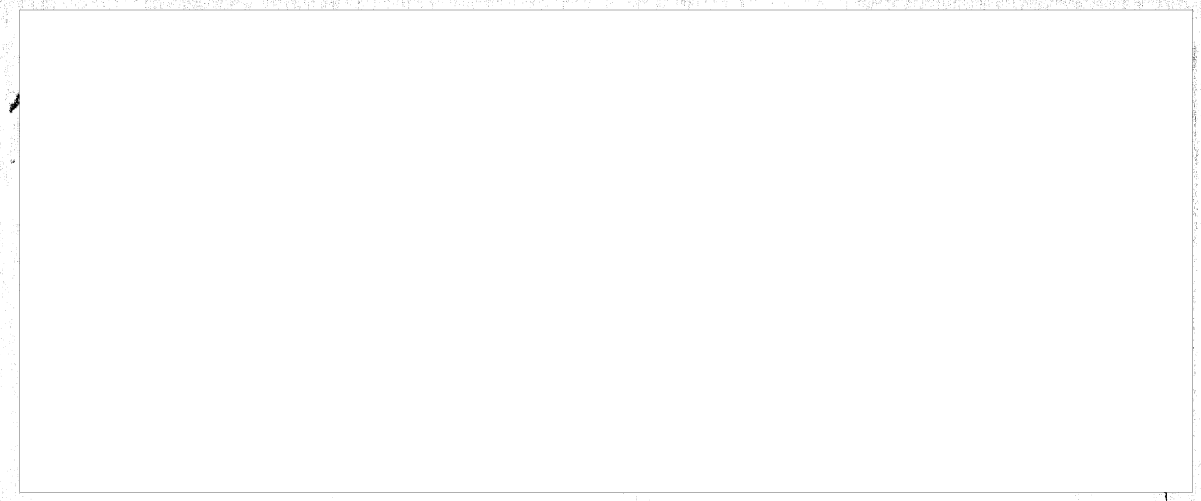

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Contents and Foreword to "Results of the Numerical Solution of the Integral Equation Encountered in the Theory of Light Scattering in the Atmosphere".

Ye. S. Kuznetsov and B. V. Ovchinskiy

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"CONTENTS AND FOREWORD TO 'RESULTS OF THE NUMERICAL SOLUTION OF THE INTEGRAL EQUATION ENCOUNTERED IN THE THEORY OF LIGHT-SCATTERING IN THE ATMOSPHERE'"

Ye. S. Kuznetsov,

B. V. Ovchinskiy.

/Note: The following represents the foreword and contents of Trudy Geofizicheskeskaya Instituta, AN SSSR, No. 4 (131), published 1949, at Moscow and Leningrad./

Foreword

The present investigation represents part of the great computational work on the application of the theory of scattering of light in the atmosphere, undertaken in the Mathematical Department of the Geophysical Institute, Academy of Sciences USSR, on the basis of the theory worked out in the Department during 1943-1944. (Note: See the works of Ye. S. Kuznetsov in Izvestiya Akademii Nauk SSSR, Seruta Geografickeskaya i Geofizicheskaya Volume VII, pages 247-336, 1943; Volume IX, pages 63-72, 1945; Volume IX, pages 204-223, 1945.)

The entire material of computations is divided into 2 parts each of which is formulated separately, the present first part includes in the main the results of the numerical solution of the integral equation encountered in the theory of light scattering in the atmosphere for various values of the physical parameters, and also the auxiliary tables of various designations and tables of the 'haziness' coefficients. All tables included in this part are of independent interest, but

also can serve as the basis for computations in solving various practical and theoretical problems connected with the scattering of light in the atmosphere.

The tables are accompanied by texts in the form of six articles, the main aim of which is to give a possibly complete representation concerning the numerical methods employed during construction of the tables. Most of the computational methods and results obtained, as given in these articles were original and were specially developed in connection with the computational work undertaken.

In the second part are included tables relating to various concrete applications of the theory of light scattering in the atmosphere.

All the results of computations, in both the first and the second parts, refer to the case of spherical scattering. Non-spherical scattering is a subject of special computational work, and the results relating this case will be formulated elsewhere.

The numerical methods employed during construction of the tables were developed by Ye. S. Kuznetsov (Articles I, II, IV, VI) and by B. V. Ovchinskiy (Articles IV, V). General guidance of the work was exercized by Ye. S. Kuznetsov. The computational work was conducted by the computers of the Mathematical Department of the Institute; namely, Yu. A. Gulin and Ye. V. Kuznetsova, under the direct guidance of B. V. Ovchinskiy.

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Ye. S. Kuznetsov and
B. V. Ovchinskiy.

Moscow
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