

## 7. フェゴ火山噴火後の成層圏エアロゾルの偏光を利用した ライダー観測

LIDAR OBSERVATIONS OF STRATOSPHERIC AEROSOLS AFTER THE  
ERUPTION OF THE FUEGO VOLCANO, WITH POLARIZATION MEASUREMENTS

藤原 玄夫 広野 求和 根部 敏和 長沢 親生

M. Fujiwara, M. Hirono, T. Itabe and C. Nagasawa

九大・理・物理

Department of Physics, Kyushu University

### Abstract

Results of the lidar observations of stratospheric aerosols after the volcanic event are shown, emphasizing the importance of the application of various methods in the lidar measurement and of the comparison of other stratospheric quantities with the lidar results in probing the characteristics of the aerosols.

The preliminary measurements of the depolarization rate of the stratospheric aerosols were made, recently. The results show that the values of the depolarization rate  $\gamma$  are very small and do not exceed that of air molecules at a height of maximum aerosol content and below. At about 21 km and above, however, the enhancement of the depolarization rate appears and the value of  $\gamma$  attains to about six times that of the air molecules at 21 km, where the normal Junge layer had persisted before the volcanic event. These results may suggest the possibility of the

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+ 偏 組成 を 測定 する には 濃度 5-10%

change of the state of matter from the liquid state in the lower region to the solid state in the upper region.

As an example of the comparison studies, the relation between ozone and aerosols in the stratosphere is examined. The comparison of ozone concentrations with non-molecular backscattering coefficient ( $\beta_M$ ) shows the possibility of negative correlation between them at the height of  $\beta_M$  maximum.