

Multi-direction lidar system using a high power 589 nm coherent light in Tromso (1) System summary

KAWAHARA, Taku D.^{1*}, NOZAWA, Satonori², TSUDA, Takuo²

¹Faculty of Eng., Shinshu University, ²STEL, Nagoya University, ³STEL, Nagoya University

We developed an all solid-state, water-free, high-power Na lidar for the measurements at EISCAT radar site in Tromso (69N), Norway. The lidar is capable of obtaining sodium density with the time resolution as good as 1 min. Using this capability, 3-dimensional observation is possible with a meaningful time resolution. The first step we are planning is 2-dimensional observation. Assuming 11 directions with 5 km horizontal distance at 100 km altitude covering 30 degree area including vertical direction, one 2-dimensional data can be obtained every 10 min which is good enough with discussing the atmospheric dynamics. We present the overview of this system and the test results of a prototype model.

Keywords: sodium lidar, MLT region, two dimensional observation, Tromso