

## Development of a 3D sodium lidar: synchronous experimentation and validation

MURANAKA, Wataru<sup>1\*</sup> ; KAWAHARA, Taku<sup>d2</sup> ; NOZAWA, Satonori<sup>3</sup>

<sup>1</sup>GSI, Shinshu University, <sup>2</sup>Faculty of Engineering, Shinshu University, <sup>3</sup>STE Lab., Nagoya University

Shinshu University, Nagoya University and RIKEN developed an all solid-state, high-power Na lidar for the temperature/wind measurements in the MLT region over EISCAT radar site in Tromsø (69 N), Norway. Current observation is five-direction mode applied to the fixed direction such as vertical and 30 degree tilted to the north, south, east and west from the vertical.

We are now updating the lidar to multi-direction system which has never been done with resonant lidars. The transmission system uses two mirrors with electric rotary stages to emit laser light to any direction of the sky. Receiver system uses a telescope controlled by a PC. The coordination of the telescope is done with direction of some bright stars. This repeatability pointing to the same direction is 5.3 mrad.

In this talk, we will discuss the experimental results of the synchronized experiments with the laser direction and telescope field-of-view.

Keywords: sodium, lidar, three dimensional