

## Measurement of temperature in upper middle atmosphere with Rayleigh lidar at Shigaraki MU Observatory

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We have been observing the atmosphere by the radar instrument in Shigaraki MU Observatory since 1984. Additionally the lidar system was equipped in March 2000. We can calculate air density and temperature in the altitude between 30km and 90km high, but in the highest region we cannot calculate correctly because of signal induced noise (SIN). In order to solve this problem, we improved the method used in the lidar system in France and calculated air temperature by the new method. We confirmed that SIN is subtracted correctly. We will compare air temperature with other instruments and make the various atmospheric waves clear.