

Answers to Reviewer #2:

This study concerns an instrumental development of a Lidar measuring wind and temperature profiles. Temperature measurement using Rayleigh scattering is not new, however the wind measurement is a challenge that have been rarely achieved. The results present here are quite convincing and have been well presented with all the required technical details. Measuring simultaneously temperature and wind at high latitude is quite valuable to study the atmospheric dynamics and will surely bring new understanding of stratospheric warming activation and evolution. I have only minor comments.

About the Rayleigh, authors should refer more about the work performed on Rayleigh lidar measurements develop within the NDACC network mainly about the validation and accuracy.

The manuscript was updated accordingly:

*“The temperature is calculated from S0 by hydrostatic integration in the aerosol free part of the atmosphere, usually above 30 km (Hauchecorne and Chanin, 1980). This method has an accuracy of 1-2 K in the upper strato- and lower mesosphere (e.g. Keckhut et al., 1993; Leblanc et al., 1998; Randel et al., 2009). “*

The second comment is about the validation about the wind measurement. Successive measurements in opposite direction is one of the best solution to prove that wind signal is strictly due to Doppler effect and not about instrumental drift. If measurements in such a configuration are available it will be interesting to show them.

*Unfortunately the data is not available yet, but we will use this configuration in future campaigns.*