

Estimate of Turbulent Energy Dissipation Rate From the VHF Radar and Radiosonde Observations in the Antarctic

- This study estimated the turbulent kinetic energy dissipation rates (TKEDRs) from 1-year observations of the PANSY radar from October 2015 to September 2016 and compared the results with estimates from radiosonde measurements based on Thorpe's method, which is conventionally used in estimating oceanic TKEDRs.
- It is found that the difference in the TKEDR between radiosonde- and radar-based estimates is larger in the middle and upper troposphere than in the stratosphere.
- An analysis using the distance from the local tropopause level showed that the local maximum in the TKEDR around the tropopause is particularly clear in austral summer.

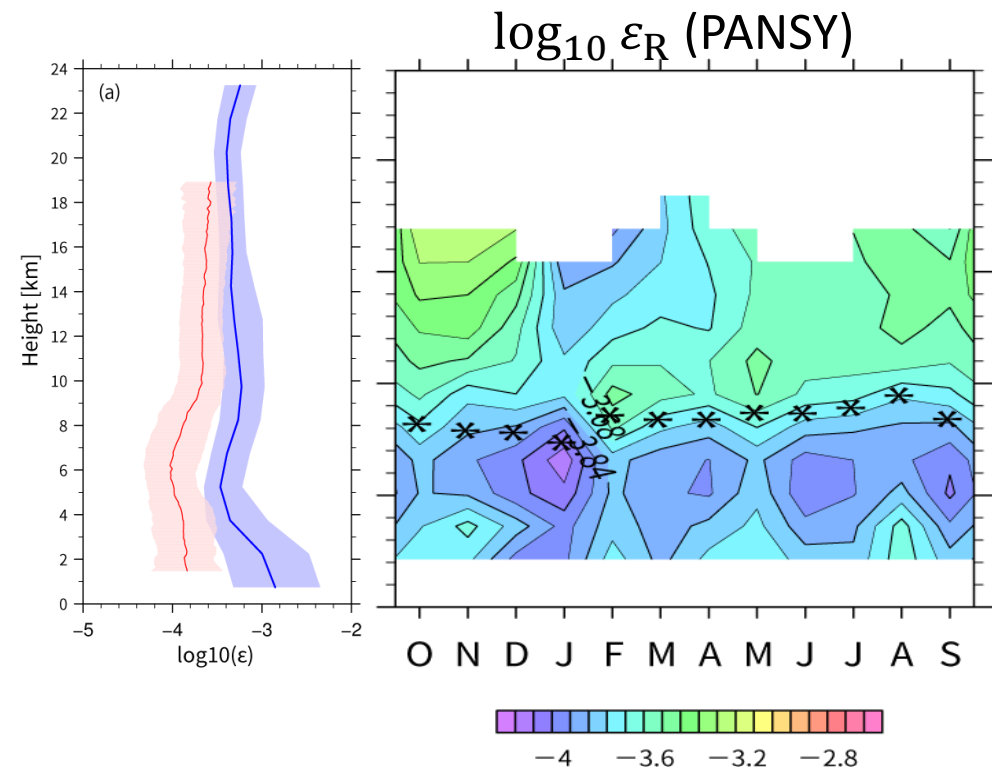


Fig: Left) Estimated TKEDR (Red: PANSY, Blue: Radiosonde). Right) Seasonal variation of TKEDR estimated by the PANSY radar. (stars indicate mean tropopause height)