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Boundary Layer Height Estimated and dynamic parameter comparison using Radiosounding Observations around globe at mid-latitude region.

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The exchange processes between the Earth and the atmosphere play a crucial role in the development of the Planetary Boundary Layer (PBL). Vertical profiles of atmospheric thermodynamic variables, i.e. temperature and humidity, or wind speed, clouds and aerosols can be used as proxy to retrieve the PBL height and other dynamic variables at different vertical and temporal resolutions. [1]. The present work aims to correlate the PBL height variability with other factors determining or interacting with the PBL, such as the mixing-ratio and CAPE. The study is focused on the mid-latitudes observations (30 ° N and 50 ° N). Radiosounding profiles from the Integrated Global Radiosounding Archive (IGRA) are used to estimate the PBL height, while the European Center for Medium-Range Weather Forecasts (ECMWF) Re-Analysis v5 (ERA5) and the GCOS Reference Upper-Air Network (GRUAN) Lindenberg station radiosounding data are used as intercomparison datasets for the study uncertainties in the trend analysis. [2][3][4].

The results of these comparisons will be summarized and discussed at the conference.

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