Session: C12 Poster: M41A

Large-scale and synoptic meteorology of the VOCALS-REx observations campaign

Thomas Toniazzo[†]; Steven Abel; Robert Wood; Carlos Mechoso; Leonard Shaffrey
[†] University of Reading, United Kingdom
Leading author: t.toniazzo@reading.ac.uk

We present an overview of the meteorology in the south eastern subtropical Pacific (SEP) during the VOCALS-REx intensive observations campaign conducted between October and November 2008. We provide a climatological context, and a summary of the day-to-day synoptic-scale circulation, air-parcel trajectories, and cloud cover. Three meteorologically distinct periods of time are identified and the large-scale causes for their different character are discussed. The first period was characterised by significant variability associated with synoptic-scale systems interesting the SEP; while the two subsequent phases were affected by planetary-scale disturbances with a slower evolution. The changes between initial and later periods can be partly explained from the regular march of the annual cycle, but contributions from subseasonal variability and its teleconnections were important. Across the whole of the two months under consideration we find a significant correlation between the depth of the inversion-capped marine boundary layer (MBL) and the amount of low cloud in the area of study. We discuss this correlation and its significance for the relationship between MBL and cloud properties and the large-scale meteorological parameters. These results are consistent with previously found empirical relationships involving the lower-tropospheric stability.