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Observations and WRF modelling of orographically-generated gravity waves above the Antarctic Peninsula during (OFCAP)

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Circumpolar westerly winds that dominate flow around Antarctica are known to provide favourable conditions for orographically-generated gravity waves when they encounter the high mountains of the Antarctic Peninsula. Downslope winds associated with these gravity waves are thought to impact the climate of the ice shelves east of the Peninsula, through the removal of low level clouds and cold continental air masses. As part of the Orographic flows and the Climate of the Antarctic Peninsula (OFCAP) field project, observations of gravity waves have been made in cross-peninsula flow at 67 degrees south using an instrumented Twin Otter aircraft, and radiosondes. Observations of gravity wave case studies will be presented and compared to high resolution (1.5 km) model forecasts using the Weather Research and Forecasting (WRF) numerical model to investigate the development several case studies.