

Antarctic boundary layer and low-level jets during climate change  
Guenther Heinemann  
University of Trier

Results of regional climate modelling simulations using CCLM with 15km resolution for the whole Antarctic are presented. The simulations were performed for time-slices at the beginning (2000-2014), the mid (2036-2050) and end (2086-2100) of the century for the SSP3-7.0 scenario. The focus is on the analysis of the climate change signal of boundary layer characteristics and low-level jets (LLJs). The near-surface wind field shows a slight increase in wind speed over the ocean towards the end of the century. For near-surface temperature an increase of up to 2°C is seen by the mid of the century and of 4°C and more towards the end of the century. LLJ frequency decreases over the slopes of the East Antarctic and coastal areas during climate change. In contrast, an increase is found over the plateau area and some ice shelf areas. The height of LLJs gets lower for some ocean areas. Both signals are less pronounced for the first half of the century.