



Elevation-dependency of the representation of precipitation with COSMO-CLM at 3km over the Alps

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Previous studies have shown that convection-permitting simulations accurately reproduce the diurnal cycle of precipitation, especially over mountainous regions in summer. However, a strong dependency to elevation has been shown with COSMO-CLM at 3km. Indeed, the model is unable to reproduce the mid-afternoon peak in low- and flat-lands in the Eastern Alps.

Associated processes are investigated in the framework of NHCM-2 (project number P24758-N29), using a set of sensitivity experiments over the greater Alpine region. These experiments are designed to cover a broad range of influences, including orographic forcing and physical parametrizations. Model evaluation is performed with a set of observations-based high-quality datasets at 1km over the Eastern Alps. These datasets are provided by the Austrian Central Department for Meteorology and Geodynamics (ZAMG), and include data from the now-casting system INCA, and newly generated gridded dataset from homogenized high-density network of in situ measurement stations. First results of process-oriented analysis will be presented in the context of model inter-comparison with WRF.