



High resolution modeling of strong winds over Tatra mountain range

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We present preliminary results of very high resolution (up to 60 m) modeling of foehn wind ("halny") conditions over Tatra mountain range in southern Poland and Slovakia. We set up EULAG model for geophysical flows on a domain of 86 by 57 km with topography based on ASTER dataset. Simulations are initiated with spatially uniform atmospheric conditions derived from atmospheric sounding in Poprad and reanalysis. We choose situations representing reported cases of extremely high wind on the lee side of Tatras. We analyze flow response, model robustness and computational performance for a series of horizontal resolutions ranging from 300 m to 60 m.

This research serves as a reconnaissance of a gray zone between cloud resolving numerical weather prediction and LES and auxiliary to the implementation of EULAG model as a new soundproof dynamical core of COSMO framework.