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Intercomparison of Spatial Verification Methods for COSMO Terrain (INSPECT): Preliminary Results

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A COSMO consortium project devoted to spatial verification methods (INSPECT) has been created to follow MesoVICT activities and to summarize the experience of applying spatial verification methods to high and very high resolution models comprising COSMO forecast systems(deterministic and EPS). In addition to targeting the objectives of MesoVICT, INSPECT has been designed with the aim of providing COSMO users with more choice of verification domains and reference data, and encouraging the participation of the COSMO community in the development and improvement of spatial verification methods. It is planned to propose a set of Guidelines by the end of the project to facilitate decision-making about which methods are best suited to particular applications.

Some first results concern applications at DWD, where the FSS and ETS for the upscaling method are calculated for 6-hr precipitation data over the entire German territory since 2007, providing plots of long-term trend of these indices. It is shown that a lower threshold and larger window give the highest skill in all cases. Such plots allow compact representation of the neighborhood scores.

Neighborhood (FSS, ETS) and possibly features-based (CRA) methods will be applied for deterministic models of different resolution, which participated in the WWRP project FROST-2014 for the Sochi region (COSMO-Ru with grid spacing 1.1 km, 2.2 km, 7km; GEM with grid spacing 2.5 km, 1 km, 0.25 km; NMMB – 1 km; HARMONIE – 1 km; INCA – 1 km). This will provide some indication of the ability to compare high and very high resolution models in complex terrain.