



Performance of a quality control system in complex terrain with open access data

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The very high spatio-temporal variation of meteorological data in a highly complex terrain makes it necessary to develop innovative methodologies for reasonable and sensible quality control of observational data.

Components of observational data can be assigned to phenomena of different meteorological scales. Different kinds of variations and errors characterize every measurement. To effectively extract the wanted information about the atmospheric condition a complex quality control system should be performed. Systematic and stochastic errors should be eliminated and an analysis of the atmospheric state allowing phenomena within different scales to remain in the data set.

The methodology and performance of the complex quality control whereas large scale and topographically induced mesoscale patterns are preserved while stochastic noise is simultaneously eliminated, is briefly presented. The aim of the quality control mechanism is to preserve physically explicable deterministic disturbances on the mesoscale and to remove stochastic noise of observational values.

The main focus on the presented poster lies on the applicability of the quality control scheme on real data obtained from different complex terrain areas. Results of testing the quality control within data sparse and dense areas under the usage of open source data will be discussed.

The quality controlled observational surface station data will be used for the Vienna Enhanced Resolution Analysis (VERA) Scheme which interpolates and downscales the irregularly distributed data to a regular grid with a horizontal resolution of 1 km or less. The resulting analysis fields are prognostic model independent and therefore highly recommended for model validation purpose.