

## **A two-dimensional discrete filter for limited area model evaluation purposes**

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Over the last years, limited area models have gained more and more importance and the regional model simulations increased in their spatial resolution as well as in their temporal extent. But, the question of added value compared to models of lower resolution in time and space is still only answered fragmentarily.

To obtain an objective tool to advance with this question, a two-dimensional discrete filter was developed. It serves as a means to classify meteorological fields according to their spatial dimensions by filtering certain wave number ranges.

Since we want to deal with an isotropic filter, the filters should have ideally identical but at least approximately equal filter response functions for all waves of the same wavelength.

The statistics of resulting low-, high- and medium-pass filtered fields of the forcing global and the regional model can be compared and evaluated to gain an insight into the characteristics of added value.