Construction and applications of 2-d digital filters for separating spatial scales

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An algorithm for deriving 2-d isotropic digital filters, which approximates a given response function, has been derived. These filters are used to examine the performance of regional atmospheric models on different spatial scales. One application is related to the identification of added value of simulations with such models as compared to driving global models, another for the identification of smaller storms, in particular typhoons and polar lows.