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An inter-comparison of spatial forecast verification methods

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Spatial forecasts provide new challenges for verifying their accuracy and useful- ness. Numerous new methods have been rapidly proposed, but it isn't clear which should be used for particular situations, and which are equivalent or effectively equivalent. The task of inter-comparing these methods is beginning. The methods can be roughly divided into four main categories: (i)Scale decomposition methods that decompose forecast and observation fields (or their error fields) into different scales (e.g., by way of Fourier transformations, wavelet transformations, etc.), (ii) features-based techniques that attempt to identify the structure of forecast errors by identifying cells of activity in each field and comparing different types of errors (e.g., displacement, amplitude, etc.), (iii) field verification techniques that morph the forecast to match up with the analysis (or observations) as much as possible, and (iv) neighborhood methods that compute traditional verification scores on a transformed grid. Here, we introduce a ma jor inter-comparison pro ject aimed at identifying which methods give the best information for particular situations, and which methods give duplicate information, as well as other characteristics of the methods to better enable a user to decide which ones to utilize.