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Parameter Estimation for Atmospheric Vortices.

The focus of this talk concerns valid statistical inferences from atmospheric vortex tangential wind measurements on intense atmospheric vortices arising in dust devils, waterspouts, tornadoes and tropical cyclones when the analysis depends on a parametric model of the information in the data. Data analysis is required to demonstrate in an objective way that a parameterized tangential wind model provides an acceptable description of the tangential wind profile of an atmospheric vortex and determine if the model can be used to make accurate predictions. Using the methodology of Information Theory and Sensitivity Analysis, information content and uncertainty in radial, tangential and vertical winds were examined and assessed for use in prediction. (Received September 16, 2013)