

Weather analysis and forecasting : applying satellite water vapor imagery and potential vorticity analysis

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Résumé ou extrait : Satellite images provide a rich source of data for predicting Earth's weather ; however, even the most experienced forecasters can misinterpret these images from time to time. The key to improving weather prediction accuracy is learning how to properly distill, manipulate, and interpret relevant numerical models in relation to this visual observation data. Weather Analysis and Forecasting is the first book to help professionals and students bring these tools together in a logical way. In this practical guide, Santurette and Georgiev show how to interpret water vapor patterns in terms of dynamical processes in the atmosphere and their relation to diagnostics available from weather prediction models. In particular, they concentrate on the close relationship between satellite imagery and the potential vorticity fields in the upper troposphere and lower stratosphere. These applications are illustrated with color images based on real meteorological situations. The book's step-by-step pedagogy makes this an essential training manual for forecasters in meteorological services worldwide, and a valuable text for graduate students in atmospheric physics and satellite meteorology.

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