

The Integration of Digital GOES-8 Satellite Imagery with Observational and Prognostic Datasets during the Winter Storm of January 1999

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ABSTRACT

The winter storm of January 1–3, 1999 resulted in the first significant synoptic snowfall of the 1998–1999 winter season to the Midwest and Great Lakes regions. This paper will illustrate the significance of high resolution digital satellite imagery in combination with operational datasets in diagnosing and forecasting the mesoscale and synoptic features associated with this event. Special emphasis will be given to the recent advances in using the 3.9 micron (shortwave infrared) imagery (Menzel et al. 1994) in determining water phase and precipitation types. Additional satellite imager channel data are presented to support the operational forecasting challenge. Finally, surface and upper air data along with gridded model fields are shown to detail the synoptic and mesoscale dynamics associated with this case.

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