

Status of MISR cloud-motion wind product

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ABSTRACT

Near-simultaneous multi-angle imagery from the Multi-angle Imaging SpectroRadiometer (MISR) forms the basis of a unique method able to simultaneously retrieve cloud motion and height from a polar orbiter platform. The method is fully automated and thus requires no input from a human operator. Cloud features within a $70.4 \times 70.4 \text{ km}^2$ mesoscale domain are tracked with the help of area and feature matching algorithms. The measured parallaxes are then unscrambled through a purely geometric and stereoscopic approach to yield the characteristic height and motion vector for the two most common cloud layers within the domain.

Examples of MISR cloud motion retrievals, highlighting the technique's unique capabilities, are presented. The first results are consistent with the pre-launch error estimates of $\pm 3 \text{ m/s}$ for wind and $\pm 400 \text{ m}$ for height. The ongoing effort at JPL and the Data Assimilation Office to issue quality flags for the motion vectors and to assess the impact of the MISR wind product on numerical weather prediction is also discussed.