

Evaluation and Quality Control of Nested Tracking Approach for Atmospheric Motion Vectors

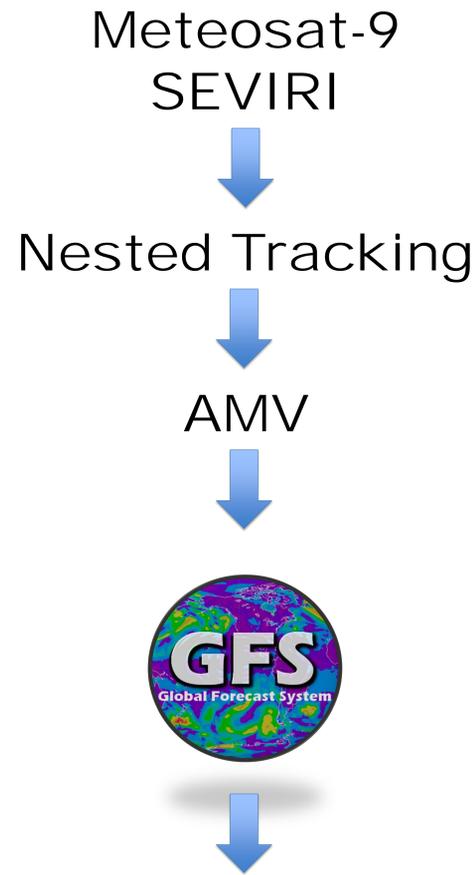


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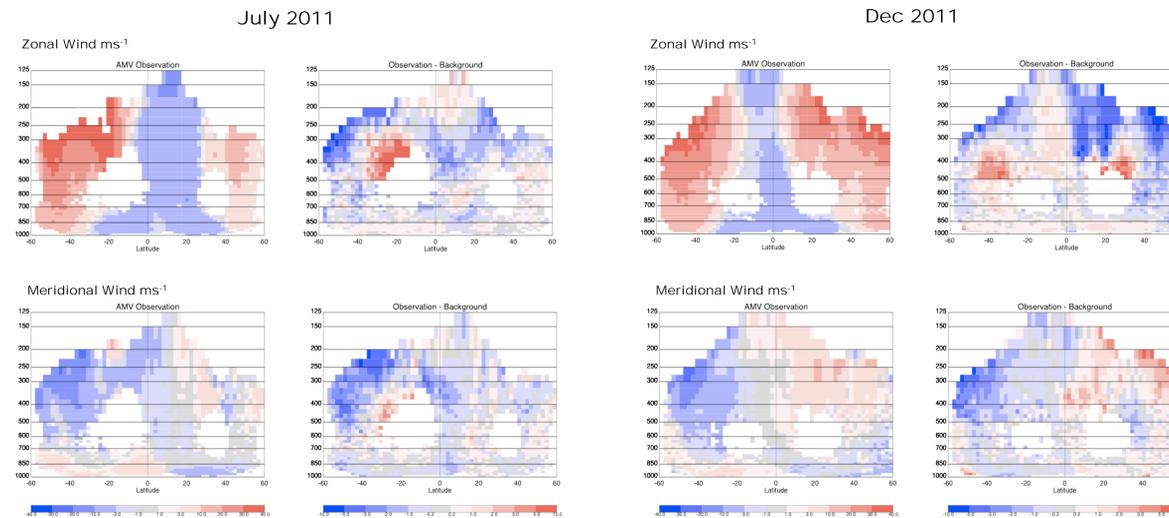
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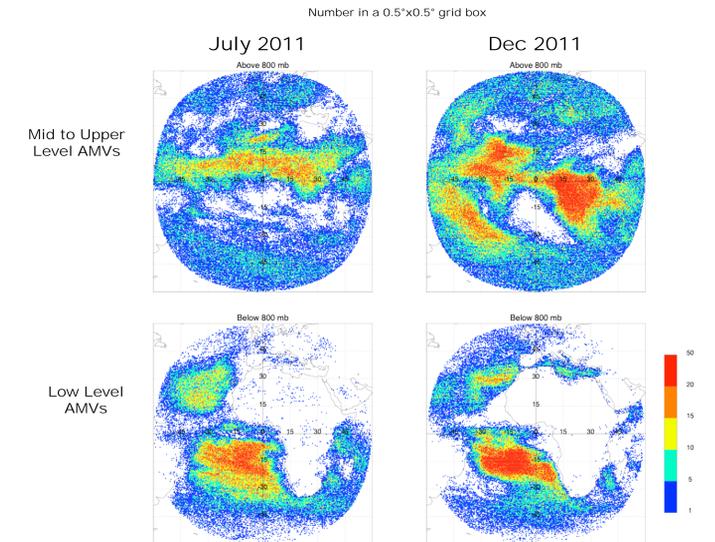
Introduction: A new algorithm to derive Atmospheric Motion Vectors (AMVs) has been developed for the GOES-R ABI. In support of GOES-R Risk Reduction, the Nested Tracking Algorithm has been applied to Meteosat-9 SEVIRI imagery to generate a proxy data set for testing. The National Center for Environmental Prediction (NCEP) Global Forecast System (GFS) was used to generate global analysis for comparison and to provide guidance in creating appropriate quality control measures for this new data product.



AMV to GFS Analysis Comparison

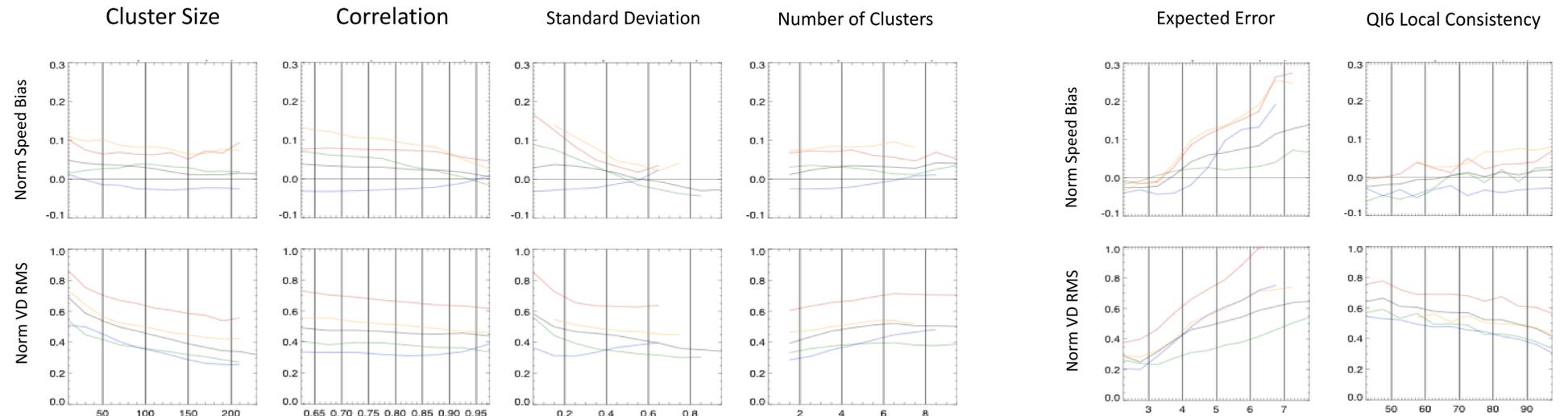


AMV Location



Quality Control Parameters

The nested tracking algorithm provides parameters related to the tracked cluster of the derived AMV. O-B normalized speed bias and vector difference RMS show varying degrees of dependence on these parameters. Quality Indicator (QI) components and Expected Error (EE) are also useful predictors of O-B statistics.



Background Analysis Winds

Two GFS GDAS runs were completed: 25 July – 2 Aug 2011 and 14 Dec – 26 Dec, 2011. Collocated analysis winds are used to compute observation – background (O-B) statistics for the proxy GOES-R AMVs. These statistics will be used to select candidate quality control parameters.

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Future Work: Once quality control procedures have been established, the proxy GOES-R AMVs will be assimilated in the GFS GDAS to evaluate the impact on the analysis and forecast skill.