

Observation operator and estimation of uncertainty in the assimilation of AIRS radiances using ensemble Kalman Filter

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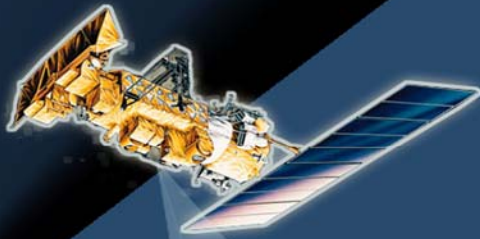
In this work we study the uncertainty of 40 ensemble members run using the CRTM forward model to produce radiances from each model state over whole domain to the subset of 324 channels of AIRS. Calculating the weighting function profile and finding the level of its maximum we are able to attribute an atmospheric level for each channel to indicate where the satellite observation will affect the model state in the LETKF analysis. The radiance fields obtained show us where the model uncertainties in the ensemble are and also where the assimilation of AIRS radiances should be more impact on the reduction of forecast error.

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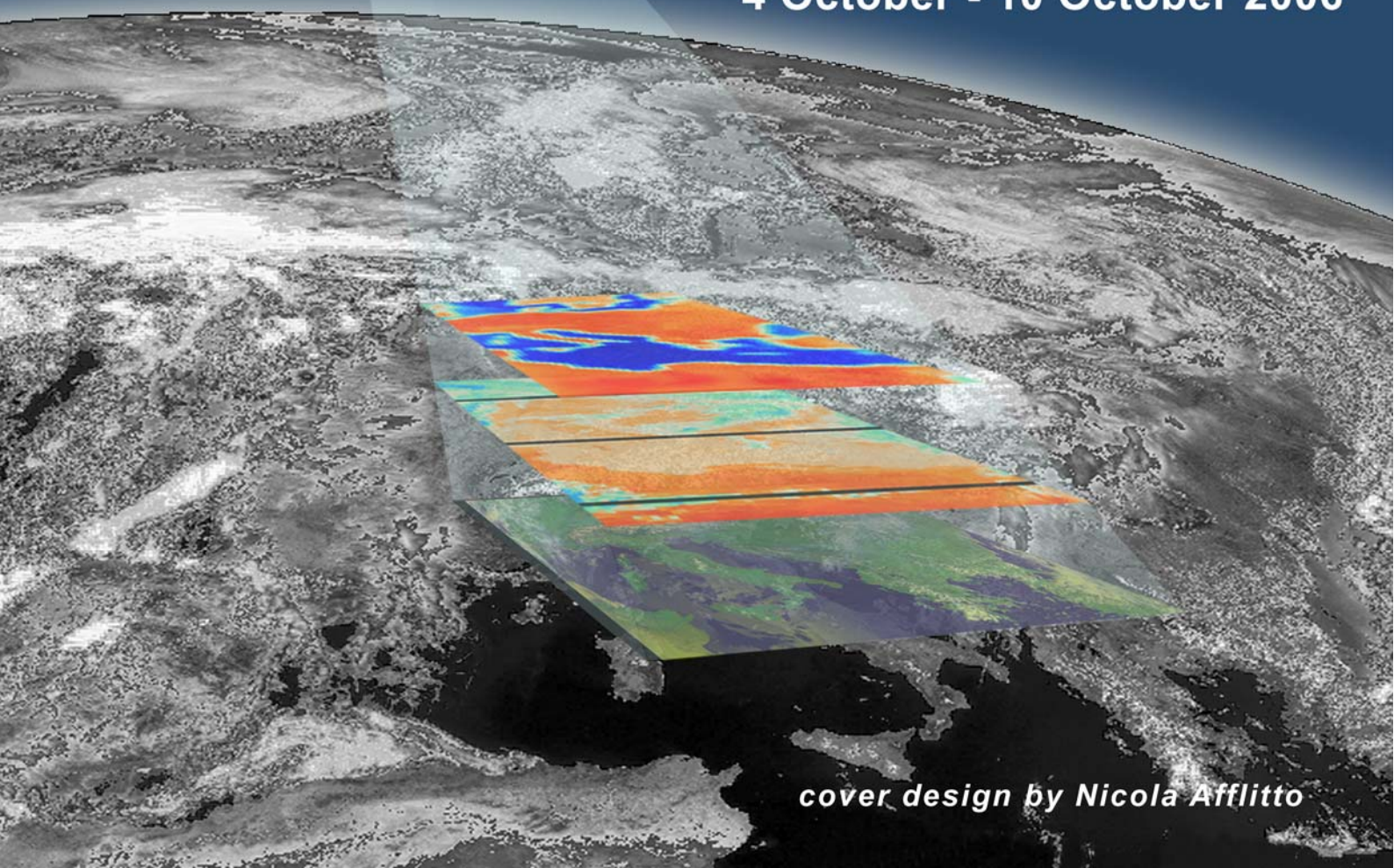
using space-based observations



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