

Assimilation of Level-1D ATOVS Radiances in Australian Regional and Mesoscale Data Assimilation and Prediction Systems

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Recent work developing and testing 60 level (L60) configurations of the Australian Bureau of Meteorology's Global Assimilation and Prediction System (GASP) and Limited Area Assimilation and Prediction System (LAPS) has progressed to the point where these systems are nearing operational trial and implementation. The L60 configuration facilitates the assimilation of ATOVS radiance data, whether received from overseas centres or locally via direct readout, processed to 1D level data via the AAPP package. The positive impact on forecast skill in the LAPS system from the use of these 1D data in trials conducted to date has been considerable.

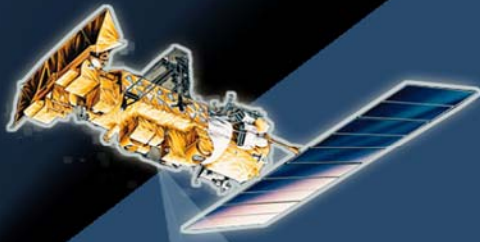
Recently we have begun trialing a limited area 10km meso-scale assimilation and prediction system. The meso-scale system employs the same L60 vertical configuration as LAPS - in which it nests - and also assimilates level 1D ATOVS radiances, with radiance bias predictors inherited from the nesting system. The focus of the work with this system has so far been on low level wind forecasts; a major potential application lies in the production of more accurate wind forecasts for the burgeoning Australian wind energy sector. Results to date suggest that the forecast skill of this system will exceed that of the Bureau of Meteorology's current operational mesoscale prediction system.

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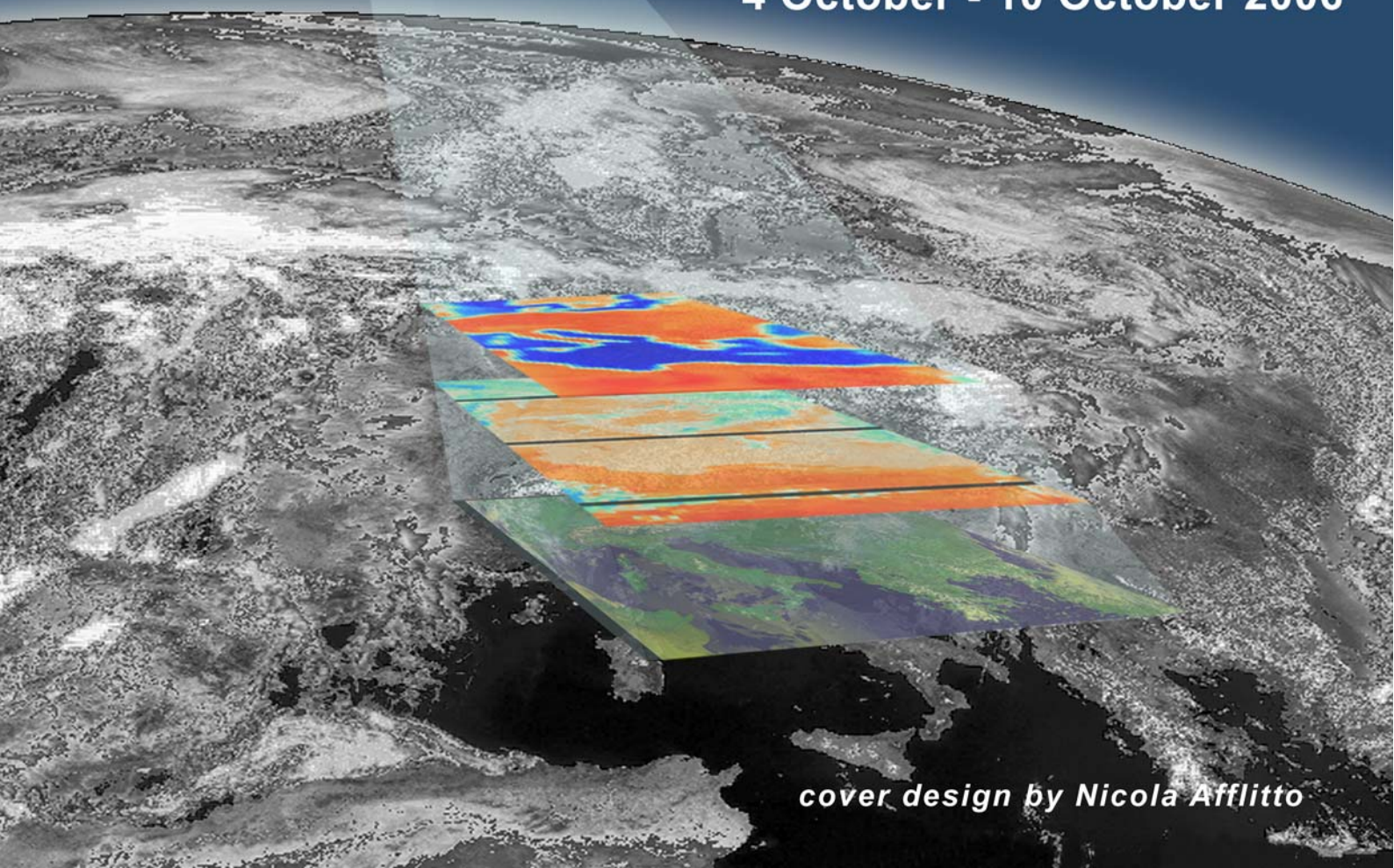
using space-based observations



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