Data Assimilation in NIWA’s Workflows

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At NIWA we perform data assimilation in several workflows: the 4·4 km NZLAM; the 1·5 km NZCSM-DA; and the 4·4 km NZLAM-NZENS-DA ensemble. All workflows use six hourly cycled 3DVAR-FGAT7, with OPS apps and control files from the Met Office’s global model. They use the same observation sources: obstore files provided by the Met Office; supplemented by local surface observations from NIWA’s network of climate stations, which are added to the surface obstore file. We use a VarBC system for the bias correction of satellite radiances, together with SatRad bias corrections, calculated each cycle from a rolling archive of BSTATS files, to update the scan dependant and passive channel biases in our VarBC file. We use a CVT based estimate for our background error covariances, calculated daily from an 84-member rolling archive of forecast pairs. In this talk I will present details of these systems in the context of the NZLAM-NZENS-DA ensemble workflow.