



Seamless Diagnostics at ECMWF

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ECMWF is carrying out forecasts from hours (analysis first guess) to seasons. Here we argue that the availability of forecasts on a wide range of time scales can be exploited for diagnosing the origin of model error. This point is illustrated for the Indian Summer Monsoon (ISM). Monitoring of seasonal forecasts revealed an erroneous increase in the strength of the ISM in a recent cycle of the ECMWF. From these seasonal integrations, however, it is hard to diagnose the origin of this increase given that different processes had time to interact. By investigating analysis increment, on the other hand, it becomes clear that the deterioration of the ISM had its origin primarily in changes to the vertical diffusion scheme rather than the convection scheme.