



Short-term Polar Motion Forecasts from Earth System Modeling Data

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Forecasts of polar motion variations for 10 days into the future have been obtained from predicted states of the atmosphere, ocean and continental hydrosphere as represented in global numerical models that were consistently forced with ECMWF medium-range atmospheric forecasts. Within a hind-cast experiment covering 2003 - 2008, the effective forecast length of the combination have been found to be 7 days, primarily limited by the accuracy of the atmospheric wind fields. In comparison to present-day forecasts provided by the IERS bulletin A, skill scores of excitation functions are improved by up to 0.5 for forecast days 4-5, leading to accumulated polar motion forecast errors for day 5 to 10 that are reduced by more than 26% compared to bulletin A.