

Atmospheric angular momentum, length of day and long range predictions

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We use ensemble predictions from a dynamical climate model with initial conditions in the ocean and atmosphere to show that fluctuations in atmospheric angular momentum and the length of day are predictable out to years ahead. Unlike most weather and climate predictions, the skill varies non-monotonically with lead time, falling in summer and peaking in winter. Predictable extremes in atmospheric angular momentum are triggered in the tropics but subsequent wave-mean flow interaction allows predictable signals to propagate slowly polewards into the northern and southern hemisphere. This mechanism provides an atmospheric source of long range predictability for the extratropical jet stream.