

Atmospheric angular momentum variation can excite the Chandler wobble

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The excitation of the Chandler wobble was examined using wobble data (Earth orientation parameter) and atmospheric angular momentum (AAM) function based on Japan Meteorological Agency during 1983-1998. It was found that the AAM function around the Chandler frequency varied with time having a similar amplitude and phase lead within 30 degrees with respect to those in the function inferred from the observed wobble during 1987 - 1995. The effects of relative angular momentum due to wind and atmospheric mass redistribution varied with time to complement each other, so that the atmospheric excitation power can have almost same power as that from the observed wobble. Therefore we confirm that the atmosphere by itself has enough power to excite the Chandler wobble.