



Moon influence on equatorial atmospheric angular momentum

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The variation of the equatorial atmospheric angular momentum function, coordinated with respect to a star-fixed system, is investigated in relation with the lunar tide. We isolate the rapid fluctuations, below 30 days, where Moon motion has a possible influence. First we notice that pressure term and wind term are almost proportional, by contrast to celestial seasonal band (S1). This would mean that, in this frequency band, the torque of the atmosphere on the solid Earth mostly results from the equatorial bulge. Spectrum reveals sharp lunar tidal peaks at 13.66 days (O_1 diurnal tide in the terrestrial frame) and 13.63 days, reflecting the Moon influence on meridional circulation. We also observe powerful episodic fluctuations between 5 and 8 days (up to 10 mas), possibly resulting from non linear effect of the O_1 tide, or tidal waves $2Q_1$ (6.86 days) and σ_1 (7.095 days).