



The Chandler wobble as a trigger of the El Niño excitation

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Using data of the Met Office Hadley Centre, time series of the near surface temperature and sea-surface pressure for the period 1875-2012 are processed to compute the Oceanic Niño Index (ONI) and the Equatorial Southern Oscillation Index (ESOI). Detailed spectra of the ONI and ESOI show peaks that exist throughout the year, but the most powerful in the boreal winter months. Peak periods are consist of 29, 43 and 58 months, which is roughly equivalent to 2, 3 and 4 periods of the well-known 14-month Chandler wobble of the Earth's pole motion. A plausible physical mechanism of the Chandler wobble influence on the El Niño excitation is presented. A computation of the global fields of the spectral energy at each of the periods afore-indicated admits to identify some distinctive features of the spatial structure of the most powerful disturbances during El Niño. Detailed spectra of the El Niño Modoki Index (EMI) computed for each month separately show differences between main oscillations of El Niño Modoki and classic El Niño. Besides, computations are made of cross-correlations and lead/lag interrelations between El Niño and some other processes in the global climate system for all afore-indicated periods. Some regions are identified for which the cross-correlations are essential, but the processes being considered either lead or lag El Niño. This finding admits to suppose that there exists an external force common for both, El Niño and other macroscale climatic processes.