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El Nino as an element of a global-scale wave in the atmosphere-ocean system

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The analyses of the real meteorological and oceanographical data, and long runs of the coupled atmosphere-ocean hydro- thermodynamical models identify a spatial-temporal structure of the main mode of the interannual to decadal climatic variations. This mode looks like a global-scale wave that extends from West to East around the Earth, and varies rhythmically. In fact, the establishment of this wave is a generalization and development of the well-known structures of the so-called "teleconnections" in the ocean-atmosphere system. The known regional structures like ENSO, IOD, PDO, IPO, PNA, NAO, AO, ACW and other can be considered as parts of this global-scale wave.
Moving eastward around the Earth, this wave triggers El Nino – Southern oscillation events. An index of this wave is proposed as a sum of normalized anomalies of the sea level pressure and the near-surface temperature in 20 locations around the globe. It is proven that the power spectrum of this index is not continuous but discrete in its character. Thus, one can suppose that the dynamics of the global-scale wave is nonchaotic, and so predictable with no limit in principle. The index power spectrum reveals statistically significant peaks at the same periods that are inherent to the power spectra of the traditional ENSO indices. The main peaks are at the sub-harmonics of the well-known Chandler wobble (of the $\sim$1.2 year period) in the Earth's pole motion: 3.6; 4.8; 2.4 years. Some other statistically significant peaks also are seen at the super-harmonics of the Luni-Solar nutation (of the $\sim$18.6 year period), and combinational harmonics of the Schwabe's and Hale's solar activity cycles.
Based on the eastward propagation of the global-scale wave, a predictor of ENSO events was suggested. It has high correlation (about 0.7) with Nino indices but leads them on about 12 months. The use of this predictor opens a possibility to overcome the Spring Predictability Barrier in ENSO forecasting.