



## **Ocean circulation variability in the Southern Ocean as the trigger of ENSO events**

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The idea about the ocean as the trigger of climatic phenomenon like El Niño Southern Oscillation (ENSO) is considered. It is shown that variability due to the joint effect of bottom topography, coastlines and atmospheric conditions over the Antarctic Circumpolar Current (ACC) induces pressure anomalies and proper variations in meridional flows in the Pacific sector of the Southern Ocean (SO), which are anticorrelated with the strength of the wind over the ACC. That can induce some additional density anomalies in the SO and be transferred to the low latitudes by the wave mechanism described by Ivchenko et al. (2004). From this point of view, the ENSO is modeling with the help of a simple model representing a classical damped oscillator, with eastern Pacific sea surface temperature (SST) and mean equatorial Pacific thermocline depth playing the roles of momentum and position, correspondingly. This system is applied by the external force, which is defined by the meridional mass fluctuations in the Pacific sector of the SO due to the interaction of the atmospheric variability over the ACC with bottom topography, and the variability of westerly winds in the tropics. Under such conditions the oscillations arise as the interaction between external force and the time delay between the east and the west of the Pacific that is due to both finite Kelvin wave speed and SST dynamics. The external force is the main factor of the established oscillation pattern.