



## **On the origin of climate change during the Pleistocene and Holocene**

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Core records, both ice and deep-sea, suggest that the dominant character of the climate variability is that of a red-noise process. Core records, both ice and deep-sea, suggest that the dominant character of the climate variability is that of the following processes: 1) 100 ka quasiperiodicity, 2) Milankovitch periodicities, 3) red-noise process. To describe the mechanisms the specific equation (based on energy balance model) was developed

$\dot{y} - y + y^3 = \alpha y(t - \tau) + f + \sum_k a_k \cos \omega_k t$ . It describes the time-behavior of the

Northern hemisphere averaged temperature anomaly. Analysis of its solution has allowed to determine that mentioned above properties of climate variability is governed by a combination of the linear temporal variation of solar insolation, collapse threshold, the system memory time scale, stochastic resonance, nonlinear delay oscillator and the intensity of the stochastic forcing.