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Theoretical evidence for the link between geomagnetic reversal and glacial events: stochastic resonance in the geodynamo model CHIH-YUAN TSENG, Dept. of Physics, National Central University, CHIEN-CHIH CHEN, Dept. of Earth Sciences and Graduate Institute of Geophysics, National Central University — Not yet a theoretical analysis can explain the coincident temporal correlation between the geomagnetic reversal and glacial events, which both have a quasi-period of about 100 kyr, although there exists dozens of observational evidences for such correlation. The geodynamo has widely been thought to be an intuitive and self-sustained model of the Earth's magnetic field¹⁰. In this letter we report how possible a signal with 100 kyr quasi-period can be embedded in the geomagnetic field *via* the mechanism of stochastic resonance in a forced Rikitake dynamo. We thus suggest one common triggering for the geomagnetic reversal and glacial events, neither the glaciation controls the geomagnetic reversal nor vice versa. Instead, both kinds of catastrophes may result from the cyclic variation of the Earth's orbital eccentricity.

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