



## **Plate Tectonic controls geomagnetic reversal frequency**

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The discovery of the reversals of Earth's magnetic field and the description of plate tectonics are two of the main breakthroughs in geophysics in the 20th century. We claim that these two phenomena are correlated and that plate tectonics controls long-term changes in geomagnetic reversals frequency. More precisely, we show that geological periods characterized by an asymmetrical distribution of the continents with respect to the equator generate periods of high reversal frequency. We infer that the distribution and symmetry of mantle structures driving continental motions at the surface influence the equatorial symmetry of the flow within the core and thus changes the coupling between the dipolar and quadrupolar modes which controls the occurrence of reversals.