



## **Comparison of the dipolar magnetic field generated by two Ising-like models**

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We consider two Ising-like models named respectively the “domino” model and the Rikitake disk dynamo model. Both models are based on some collective interactions that can generate a dipolar magnetic field which reproduces the well-known features of the geomagnetic field: the reversals and secular variation (SV). The first model considers the resultant dipolar magnetic field as formed by the superposition of the magnetic fields generated by the dynamo elements called macrospins, while the second one, starting from the two-disk dynamo action, takes in consideration the collective interactions of several disk dynamo elements. We will apply two versions of each model: the short-range and the long-range coupled dynamo elements. We will study the statistical properties of the time series generated by the simulation of all models. The comparison of these results with the paleomagnetic data series and long series of SV enables us to conclude which of these Ising-like models better match with the geomagnetic field time series.

Key words: geomagnetic field, domino model, Rikitake disk dynamo, dipolar moment