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The Neoproterozoic geomagnetic field: new insights from a high-resolution paleomagnetic study in South China

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The paleomagnetic record during the middle Neoproterozoic (~825-780 Ma) displays rapid apparent polar wander variations leading to large discrepancies in paleogeographic reconstructions. Some authors propose that these data may represent true polar wander events, which correspond to independent motion of the mantle and lithosphere with respect to Earth's rotation axis. An alternative explanation might be a perturbation of the geomagnetic field, such as a deviation from a predominantly dipole field or a hyper-reversing field. To test these hypotheses, we sampled 1200 oriented cores over a stratigraphic height of 100 metres in sedimentary rocks of the 820-810 Ma Laoshanya Formation in South China. We will present preliminary paleomagnetic and rock magnetic analyses together with results of petrologic and geochemical experiments to better understand the origin of the paleomagnetic signal.