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Fault-related fold kinematics recorded by terrestrial growth strata, Sant Llorenç de Morunys, Pyrenees Mountains, NE Spain

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Abstract

Foreland basin growth strata are ideal recorders of deformation rates and kinematics in tectonically active regions. This study develops a high-resolution chronostratigraphic age model to determine folding rates in the Eocene-Oligocene terrestrial growth strata of the Berga Conglomerate Group, NE Spain. The Berga Conglomerate Group was sampled for rock magnetic, magnetostratigraphic, and magnetic susceptibility (χ) cyclostratigraphy analyses. Analysis of rock magnetic measurements indicate a mixed mineral assemblage with both paramagnetic and ferromagnetic minerals. A new magnetic reversal stratigraphy constrains the time frame of folding and is in agreement with previous interpretations. Time series analysis of χ variations show statistically significant power at expected orbital frequencies and provides precession-scale (20 kyr) temporal resolution. Strain measurements including anisotropy of magnetic susceptibility (AMS) fabrics and bedding plane

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