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## Magnetic susceptibility across the Frasnian–Famennian boundary at the Boulongour Reservoir (Northwest Xinjiang-Uygur Autonomous Region, China)

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In general, the Late Devonian sequence at the Boulongour Reservoir (NW Xinjiang, China) is represented by tuffs, volcanoclastic deposits, limestones, shale, marls, chert, silt- and sandstones. In that sequence the Frasnian–Famennian boundary is identified by conodonts (CHEN et al., 2009) within the lowermost part of the limestone bearing unit (Hongguleleng Formation). The sedimentary sequence across the upper part of the *linguiformis* and *triangularis* zones consists of bioclastic limestone beds alternating with green shale on centrimetric to decimetric scale. The limestones have yielded an abundant macrofauna (principally brachiopods and crinoids). These faunas show very rapid rebound from the F/F biotic crisis. We see no sedimentologic evidence, such as black shale, of the global Upper Kellwasser Event in order to compare this section with others globally. In quest of additional evidence of the Kellwasser Event, we took bulk rock samples of each bed for geochemical and geophysical analyses.

Magnetic susceptibility (MS) was measured on 10 cm<sup>3</sup> samples with a Bartington MS3 magnetic susceptibility meter and MS2B dual frequency sensor. The resulting MS values show a distinctive negative trend which starts shortly before the Frasnian–Famennian boundary. Below the stage boundary, values vary between 1.59E-04 and 3.19E-04 before shifting to values below 1.00E-04 within the uppermost portion of the *linguiformis* Zone (ca. 2.4 m above the formation-base) which consecutively decrease to values around 6.81E-05 during the lower part of the *triangularis* Zone (up to ca. 6 m above the formation-base). This trend is consistent with sea-level rise across the F/F-boundary which is also supported by microfacies and geochemical data.

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### References

- CHEN, X.-Q., MAWSON, R., SUTTNER, T.J., TALENT, J.A., FRÝDA, J., MATHIESON, D., MOLLOY, P. & BERKYOVÁ, S. 2009. Late Devonian (latest Frasnian–Famennian) faunas from the 'Hongguleleng Formation' and the F–F boundary in northern Xinjiang, NW China. *Berichte des Institutes für Erdwissenschaften, Karl-Franzens-Universität Graz*, 14, 18-20.