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Climate of the Past
Discussions

Interactive comment on "Palaeoclimate evolution across the Cretaceous–Palaeogene boundary in the Nanxiong Basin (SE China) recorded by red strata and its correlation with marine records" *by* Mingming Ma et al.

Anonymous Referee #1

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Detailed comparison of paleoclimatic records between land and ocean is essential to evaluate the global paleoclimate pattern. This study constructed new data across the Cretaceous-Palaeogene boundary boundary in the Nanxiong Basin (SE China). On the basis of previous paleomagnetic studies, authors provided a new interpretation of magnetostratigraphy, and found that patterns of paleoclimatic proxies (magnetic susceptibility and Neel temperature) from the studied profile are similar to the global d18O curves. Then they divided the results into three stages with distinct patterns. Overall, this study is interesting because it provides new results from the terrestrial media and

thus has global paleoclimatic significances. However, the following two issues need further clarifications: 1) The fidelity of the magnetostratigraphy Authors provided an new interpretation in section 4.1. This new interpretation is the foundation of the whole story. From lines 302-309, there are still presence of ambiguities even for the new interpretation. Therefore, more subtle discussions on the magnetostratigraphy are still needed. 2) Magnetic susceptibility is a complicated proxy. Authors need more discussions on the exact variation mechanism for susceptibility. It seems that hematite is the dominant magnetic minerals, it will be more direct to measure hematite-related proxies, e.g., HIRM, DRS results, etc.

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