EGU22-3179
https://doi.org/10.5194/egusphere-egu22-3179
EGU General Assembly 2022


# Intensified continental chemical weathering and carbon-cycle perturbations linked to volcanism during the Triassic–Jurassic transition

**jun shen**
China University of Geosciences, Wuhan, China (shenjun@cug.edu.cn)

Direct evidence of intense chemical weathering induced by volcanism is rare in sedimentary successions. Here, we undertake a multiproxy analysis (including organic carbon isotopes, mercury (Hg) concentrations and isotopes, chemical index of alteration (CIA), and clay minerals) of two well-dated Triassic–Jurassic (T–J) boundary sections representing high- and low/middle-paleolatitude sites. Both sections show increasing CIA in association with Hg peaks near the T–J boundary. We interpret these results as reflecting volcanism-induced intensification of continental chemical weathering, which is also supported by negative mass-independent fractionation (MIF) of odd Hg isotopes. The interval of enhanced chemical weathering persisted for ~2 million years, which is consistent with carbon-cycle model results of the time needed to drawdown excess atmospheric $CO_2$ following a carbon release event. Lastly, these data also demonstrate that high-latitude continental settings are more sensitive than low/middle-latitude sites to shifts in weathering intensity during climatic warming events.