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Rhyolites in the Emeishan Large Igneous Province (SW China) with implications for plume-related felsic magmatism

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Highlights：

- Nb-Ta-poor and Nb-Ta-rich rhyolites are identified in different stratigraphic positions of the Emeishan flood basalt sequence.
- Nb-Ta-poor rhyolites at the base of the stratigraphic section were formed through partial melting of middle or upper crustal materials of the Yangtze Block.
- Nb-Ta-rich rhyolites have an age of 261.0 ±1.7Ma, coeval with the Emeishan magmatism.
- Nb-Ta-rich rhyolites are best interpreted as hybrid products of crystal fractionation of high-Ti basaltic magma, coupled with 6%-14% crustal assimilation.

Abstract

In the Emeishan Large Igneous Province (ELIP), western Yangtze Block, SW China, minor amounts of silicic volcanic rocks (~5 %) are spatially and temporally associated with flood basalts. The