



## **Detrital provenance of the Itremo Group in central Madagascar using trace elements and Hf isotopes in zircon**

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The Itremo Group of central Madagascar is made up of quartzites, schists and marbles. Understanding the provenance of the Itremo Group allows us to interpret the tectonic geography at the time of deposition. Published detrital zircons from the Itremo Group indicate the maximum depositional age is c. 1600 Ma, with dominant age peaks at c. 1850 Ma, c. 2500 Ma and c. 2700 Ma. The Itremo Group is intruded by the c. 850–750 Ma Imorona-Itsindro Suite, which provides a minimum age constraint on deposition. Several sources and correlatives have been suggested for the Itremo Group, including those in Africa and India.

Pioneering detrital zircon U-Pb studies instigated the ‘out-of-Africa’ model for central Madagascar. In subsequent years, this has been challenged and other datasets complimentary to U-Pb ages, such as zircon rare earth element contents and Hf isotopes, have been collected on possible comparable sequences and source regions. This has left the Itremo Group as a relatively poorly known group. Here we additionally analysed zircons for trace elements and Hf isotopes, which we can use as another fingerprinting tool to assess potential source regions for the Itremo Group. There is currently no published Hf zircon data for the Itremo Group, so we present for the first time, information relating to the crustal evolution of potential source regions.

We have also tested proposed paleogeographic reconstructions for Gondwana based on detrital zircon correlations between the Itremo Group and possible source terranes.