

Geowissenschaftliches Kolloquium

Applications of $\Delta^{17}\text{O}$ in terrestrial water and rocks

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How cold was snowball earth?

The oxygen isotope ratio $^{18}\text{O}/^{16}\text{O}$ is analyzed routinely usually serving as a tracer or as a thermometer. The fractionation of $^{17}\text{O}/^{16}\text{O}$ is about half the fractionation of $^{18}\text{O}/^{16}\text{O}$, because most fractionation processes are strictly mass dependent. Therefore it is frequently assumed that all materials from Earth fall on a single terrestrial fractionation line (TFL). I will explain why this is not the case and how this fact can be used to solve geological problems.



Dr. Daniel Herwartz received his diploma and doctorate degrees in Bonn where he used Lu-Hf isotope systematics to date eclogites and to study fossil bones. He then started to work on triple oxygen isotope systematics of silicates in Göttingen. He currently works at the Universität zu Köln working on triple oxygen isotopes of water.

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