

Haas, Isabella; Kurz, Walter; Fritz, Harald; Gallhofer, Daniela; Hauzenberger, Christoph; Mandl, Magdalena

## Provenance of the Permo-Mesozoic cover sediments of the Seckau-Schladming nappe system revealed by detrital zircons

Universität Graz, Österreich;

[walter.kurz@uni-graz.at](mailto:walter.kurz@uni-graz.at)

The Permian to Mesozoic cover sequences within the Austroalpine nappe system are an important source of information to reconstruct the paleogeographic evolution of the Eastern Alps. These meta-sedimentary units reflect the tectonic events subsequent to the Variscan orogeny, with the onset of crustal extension and the formation of continental rifts and horst- and graben structures with alternate sediment sources. Detrital U-Pb zircon age spectra of the Rannach and Oberhütte formations, the equivalent sedimentary cover units of the Seckau and Schladming nappe systems, respectively indicate a northern Gondwana margin origin. 550 Ma aged zircons from both nappe systems, which can be associated with an internal source from the Seckau nappe basement, reflect a phase of arc magmatism known from the northern Gondwana area. While the meta-sedimentary Rannach formation of the Seckau nappe system contains Late Miaolingian/Early Furongian detrital zircons (c. 490-500 Ma), related to plutonism within the Cadomian arc and sourced internally by the Seckau nappe basement, the Oberhütte formation of the Schladming nappe complex lacks these zircon ages. Middle Ordovician ages (c. 450-460 Ma) within both nappe systems reflect rifting-related magmatism along the northern Gondwana margin, that resulted in the detachment of continental fragments. For the present-day Seckau and Schladming basement complexes, this evolution resulted in a paleogeographic position at the southern Galatian terrane margin. Early Variscan arc magmatism can be seen within zircons of the Rannach formation, again internally sourced by Upper Devonian/Mississippian (c. 360 Ma) plutonites within the Seckau nappe basement. Detrital zircon ages of early Permian origin for both cover units and a Late Mississippian KDE peak within the Oberhütte formation might be sourced by granitoids within the western Tauern Window.

**Session:** *Pangeo workshop: Regional Geology*

**Keywords:** *Schladming Nappe, Seckau Nappe, Rannach Formation, Oberhütte Formation, detrital zircons*