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New constraints on the pre-Alpine evolution of the Austroalpine basement: A LA-ICP-MS U/Pb zircon study on the Schladming nappe

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The crystalline basement of the Schladming Nappe, Eastern Alps, is part of the Silvretta-Seckau Nappe system. It consists mainly of ortho- and paragneisses which were intruded by slightly overprinted granites and granodiorites. On top of the basement a sedimentary cover (e.g. Rannach Formation) containing quartzites and meta-conglomerates is usually developed.

In the last decade the Schladming Nappe has not stirred interest as there is no precise geochronological data available and the metagranitoids are assumed to be part of the widespread magmatic intrusions connected to the Variscian orogeny. These general presumptions will be examined by new U/Pb zircon data in order to complete the knowledge of the pre-Alpine and Alpine magmatic and tectonic evolution of the Schladming nappe system. Additionally, major and trace elements geochemistry will provide information on the origin and evolution of the magmatic source.

In order to better define the sedimentary cover sequence a provenance study including dating of detrital zircons is undertaken. By dating these detrital zircons, the minimum deposition ages of the sedimentary precursor rocks as well as information about the paleogeographic positions of these units will be obtained.