



Memorandum

Datum: 15. September 2015
Von J. Tits
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An: siehe Verteiler
cc:

Einladung zu einem ausserordentlichen LES Palaver

Ich lade Sie herzlich ein.

Referentin: Latina Nedyalkova, Innsbruck

Thema: Petrology, geochemistry and emplacement age of a pegmatite from the Texel complex, South Tyrol, Italy

Zeit: Dienstag, 22. September 2015, 11.00 Uhr

Ort: Sitzungszimmer OHSA/E13

Abstract

The focus of the master thesis is a pegmatite from the summit area of the Hohe Kreuzspitze, which is part of a larger pegmatite field hosted by the metamorphic rocks of the Austroalpine Texel complex. The Texel complex is situated in South Tyrol, Italy and represents the westernmost part of the Koralpe-Wölz high-pressure nappe system. Geochemical and mineralogical investigations with electron microprobe, LA-(MC)-ICP-MS, IR, and SIMS were carried out on samples from both, the pegmatite and its contact zone, in order to constrain the pegmatite mineralogy, emplacement age and evolutionary history, as well as its relation with other pegmatites from the Texel complex and from further occurrences throughout the Eastern Alps.

The major mineral assemblage consists of quartz + albite-rich plagioclase + K-feldspar + muscovite + tourmaline + garnet accompanied by accessory beryl, apatite, zircon, a Nb-Ta-phase and uraninite as inclusions in zircon. In the border zone, as a result of pegmatite-wall rock interactions during pegmatite emplacement, additional tourmaline, Sn-Nb-Ta-rich titanite, cassiterite, rutile, and pyrochlore-group phases have formed. U-Pb dating of the titanite yields a crystallization age of 233 ± 6 Ma. This age correlates with the permo-triassic extensional stage that has been related to multiple pegmatite emplacements in different parts of the Eastern Alps. The absence of a granitic intrusion related in space and time with the investigated pegmatite indicates an anatectic origin. Mineral zoning in most mineral phases and overgrowth textures record a subsequent metamorphic overprinting during the Eoalpine metamorphism which reached here the amphibolite/eclogite facies.

Freundliche Grüsse

J. Tits