TEXTURAL POSITION AND STRUCTURAL STATE OF ZONED ZIRCONS FROM MÓRÁGY, HUNGARY AND RASTENBERG, AUSTRIA

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Zircons included in and/or encapsulating rock forming minerals of all the three major rock types of the petrologically and geochemically related Variscan plutonic complexes from Mórágy Hills, Hungary and Rastenberg, Austria were characterized for their textural position and for their internal texture.

Zircons of different morphology were hosted by different rock forming minerals at both localities: 1. „normal" calc-alkaline magmatic zircon (S_{24}, S_{25}) in biotite, amphibole and feldspar, 2. flat prismatic zircon (re-determined as AB_5) in biotite and feldspar, 3. elongated, prismatic zircon (P_5) in feldspar and quartz.

Simultaneously these zircons are rich in both single phase and multiphase mineral inclusions. The latter type, consisting Na-free K-feldspar, albite and quartz, found most commonly in elongated zircons, indicates lower temperature crystallization from Si-rich granite melt, confirming that zircon crystallized continuously during the solidification of granitoid magma.

Zircons themselves are heavily zoned, showing both primary (growth, normal magmatic with xenocryst core, sector) and secondary (convolute) zoning features.

Cathodoluminescence, backscattered electron imaging and Raman spectroscopy were used for determining the structural state of the zircon zones. Normal and flat zircons show zones of all structural states (well crystallized, intermediate, metamict), while the elongated, zoning free zircons are mainly well crystallized and intermediate.

We believe that these textural and structural state information types are necessary for the reliable age interpretation of the host rock types when using LA-ICP-MS based U-Pb, Th-Pb geochronology of these zircons.