



Comparison of phyllosilicate reaction progress indicating parameters and organic maturity in the western Greywacke Zone

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The low-grade metamorphic rocks of the western Greywacke Zone are separated from formerly deeply buried rocks of the low- to high grade metamorphic Penninic Tauern Window by the sinistral transpressional Salzachtal-Ennstal Fault Zone (SEFZ). The Cretaceous tectono-metamorphic overprint of the Greywacke Zone was succeeded by a local Latest Eocene/Oligocene heating of the contact between the Greywacke Zone and the Tauern Window.

Along the SEFZ, epizonal illite Kübler index (KI) values differ from high-temperature anchizonal KI data within the internal parts of the Greywacke Zone. By the application of the “Raman spectroscopy of carbonaceous material thermometer” a narrow zone along the SEFZ is mapped as a thermal aureole with peak metamorphic temperatures close to 400°C, resembling the metamorphic temperatures at the northern margin of the Tauern Window (FRANK et al., 1987). The combined use of the “Raman spectroscopy of carbonaceous material thermometer” and “crystallinity” index measurements proves the effect of an Oligocene to Miocene thermal pulse inducing advective heat transport and circulation of fluids overprinting the Cretaceous high-temperature anchi-epizonal metamorphic pattern of the Greywacke Zone.

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References:

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