Whiteschists from The Ti-N-Eggoleh area (Hoggar, Algeria): A complex evolution from High-pressure to High-temperature domains.

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The Ti-N-Eggoleh area (Sérouènout terrane, Central Hoggar, Algeria) mainly consists in a high-pressure Neoproterozoic metamorphic formation, including many terms of an ophiolitic sequence (whiteschists, partially amphibolitised eclogites and serpentinised peridotites) that can be interpreted as resulting from the hydrothermal alteration, deformation and high-P metamorphism of an oceanic lithosphere.

The kyanite+talc±quartz whiteschists are ultramagnesian rocks, with an X_{Mg} ratio that reaches 0.99. This peculiar composition resulted from a strong magnesian metasomatism that also provoked the leaching of alkalis and LILEs, prior to the high-pressure metamorphism (Adjerid *et al.*, 2015).

The main talc-kyanite-quartz paragenesis is stable within a restricted multivariant *P-T* field that extends to eclogite facies with peak *P-T* conditions of ~17 kbar and ~650°C, in accordance with the peak *P-T* conditions in adjacent amphibolitised eclogites from the same area.

The subsequent development of cordierite ± peraluminous Mg-rich sapphirine ± corundum symplectites and coronae at the contact between talc and kyanite is explained by isochemical and almost FMASH-univariant reactions (Tlc + Ky + Qtz → Crd; Tlc + Ky → Crd + Crn; Tlc + Ky → Crd + Spr) that are more or less coeval and combined together to produce hybrid microstructures. These metamorphic reactions indicate a thermal overprint under granulite-facies conditions (650–860°C; < 12 kbar).

The combination of our results allows us to propose the following model:

- An oceanic accretion allowing the formation of an oceanic crust in a slow-spreading environment similar to the Atlantic ridge.
- A Subduction stage during the Pan-African convergence. As a consequence, marine sediments, as well as tholeiitic basalts and/or gabbros, transformed into eclogite-facies metamorphic rocks.
- A Continental collision that produced erosion and partial exhumation of the rocks, during which a high-*T* event has triggered the observed granulite-facies overprint and the late intrusion of mafic rocks.

Adjerid, Z., Godard, G., Ouzegane, K., 2015. High-pressure whiteschists from the Ti-N-Eggoleh area (Central Hoggar, Algeria): A record of Pan-African oceanic subduction. *Lithos*, 226, 201-216.