

## **The In Allaren mafic-ultramafic complex (Western Hoggar, South Algeria)**

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The ring-shaped In Allarene mafic-ultramafic complex (Tirek region) is localized in the south of the In Ouzzal terrane. It is considered as a unique mafic to ultramafic pluton that was emplaced during the Pan-African orogeny. Petrological and geochemical observations show that the core of the pluton is composed of dunites and hazburgites that are surrounded by lherzolites, websterites and gabbros with variable amounts of olivine. Low concentration of Cr-spinel was observed in all these lithologies. These mafic-ultramafic rocks were cross-cut by several doleritic dykes.

The continuous processes of differentiation and fractional crystallization combined with low sulphur fugacity inhibit the occurrence of both sulphide liquation and PGE complexation in the magmas. The dolerite and gabbro clinopyroxene composition and whole-rock geochemical data show that the emplacement of this complex was in arc tholeiitic domain. Emplacement style was in relation with the bracketing of the In Ouzzal with the surrounding terranes during the early stages of the Pan-African orogeny.

**Keywords:** mafic-ultramafic complex, Cr-spinel, tholeiitic domain, PGE, In Ouzzal