

Post-Variscan magmatism of Tighza: mapping and structural study of the Anjdam magmatic complex (south zone of Tighza district, eastern part of central Meseta, Morocco)

Aboubaker Farah^{1,*}, Houssine Boutarouine¹, Samira Makhoukhi¹, Toufik Remmal¹, Tristan Mantoy²

¹*Faculté des Sciences Ain Chock, Université Hassan II de Casablanca, BP 5366 Mâarif Casablanca, Morocco*, ²*Compagnie minière de Touissit (CMT), Mine de Tighza, Morocco*

*E-mail: aboubaker.farah16@gmail.com

The Magmatism of Tighza Mining District (TMD), as other districts of central Meseta (Zaer, Ment, Oulmès), is essentially Hercynian. This magmatism consists mostly of granitic intrusions cross-cutting the Paleozoic formations in the form of apophyses, and several veins and magmatic dykes.

The Anjdam area is located in the south of the TMD in the eastern part of the Central Hercynian Mountains, at the limit of the thrust nappe zone. The Palaeozoic terrains ranging from the Upper Ordovician to the Middle Devonian show a clear diversity, presenting a geometry, in nappes and thrusts with an E to S-E vergence, following a NE-SW trend. The lithostratigraphic study of the different deposits of this area, shows a variation in the depth of depositional environment. It draws an evolution from deep, to turbiditic, and then to shallow deposits. Furthermore, the eastern sector is marked by a well recorded syndepositional tectonics during the Paleozoic.

The petrographic study of the magmatic complexes of the Anjdam sector, suggests the identification of three areas with three dominant facies: i) in the northern half: microgranite, ii) in the southern half: microdiorite to microgranodiorite and iii) in the western border: micromonzogranite.

The Palaeozoic terrains are entirely folded, schistosed, then deformed by polyphase brittle tectonics (dominant structural directions are NE-SW and E-W to ENE-WSW) which spreads from the paroxysmal phase, driven by a dextral movement, to late-Hercynian marked by a sinistral movement, related to a stress relaxation which probably guided the emplacement of the microgranites.

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