Comparative Review of the Variscan Granitoids of Morocco and Iberia: Proposal of a Broad Zonation

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Remarkable differences stand out between the Western Moroccan Meseta (peraluminous granites) and the Eastern Moroccan Meseta (potassic to shoshonitic, calc-alkaline granitoids). In Iberia, the Variscan magmatism can be arranged into distinctive zones too (Figure), which have been compared with those in Morocco (Figure. Although two of these zones mimic the I-type and S-type subduction paired belts, the intrusion of the granitoids was mostly late-collisional. Calcalkaline, metaluminous (I-type) potassic granitoids of the southern zone may reflect a source of enriched mantle (such an enrichment taking place during Devonian Variscan subduction or latest Precambrian subduction) and different degrees of crustal contamination. Considerable volumes of peraluminous S-type granites in the central magmatic zone reflect a widespread melting of fertile levels in the crust. The third magmatic zone is characterized by the precocity (Middle Devonian to Early Carboniferous) of its magmatism with respect to the two other zones and the abundance of basic rocks. For the latter zone, we suggest that most of the magmas were generated in the context of an intra-orogenic continental rifting, while others may be subduction-related.

Key words: Moroccan granitoids / Iberian granitoids / magmatic zones