

U-Pb Early Ordovician emplacement ages and K-Ar Variscan recrystallization ages of the Fundão granitic pluton, central Portugal

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The Fundão granitic pluton is located in central Portugal and belongs to the Central Iberian Zone, which is the innermost zone of the Iberian Massif. This elliptical pluton is E-W elongated, of 100 km² and intruded metasediments of the Cambrian Grupo of Beiras, which belongs to the schist-metagreywacke complex. The Fundão granitic pluton is zoned and its rocks range from tonalite to granite. Recent ID-TIMS U-Pb ages of magmatic zircons from a tonalite and a granite are 478.1±0.5 Ma and 478.4±0.5 Ma, respectively, indicating that this pluton was emplaced in the Early Ordovician and related to the Cadomian Orogeny. Previously it has been considered a Variscan pluton.

Biotites from tonalite, granodiorite and granites were dated by K-Ar and yielded ages of 270±3 Ma to 285±2 Ma (Portugal Ferreira et al., 1977). These Variscan ages show that the pluton was heated above 300±50° C in the Late Carboniferous-Early Permian during the Variscan tectonic events.

Most granitic rocks that intruded the southern schist-greywacke complex of the Central Iberian Zone are Variscan, but some are recently dated as Early Ordovician (Antunes et al., 2009; Neiva et al., 2009; Rubio-Ordóñez et al., 2012), belong to Portuguese and Spanish plutons and crop out in a NW-SE alignment.

Antunes IMHR, Neiva AMR, Silva MMVG, Corfu F. 2009. The genesis of I- and S-type granitoid rocks of the Early Ordovician Oledo pluton, Central Iberian Zone (central Portugal). *Lithos*, 111, 168-185.

Neiva AMR, Williams IS, Ramos JMF, Gomes MEP, Silva MMVG, Antunes IMHR. 2009. Geochemical and isotopic constrains on the petrogenesis of Early Ordovician granodiorite and Variscan two-mica granites from Gouveia area, central Portugal. *Lithos*, 111, 186-202.

Portugal Ferreira M, Costa V, Regêncio Macedo CA, Gama Pereira L. 1977. Datações K-Ar em biotite das rochas granitoides da Cova da Beira (Portugal Central). *Mem. Not., Publ. Mus. Lab. Mineral. Geol., Univ. Coimbra*, n°84, 39-48.

Rubio-Ordóñez A, Valverde-Vaquero P, Corretgé LG, Cuesta-Fernandez A, Gallastegui G, Fernández-González M, Gerdes A. 2012. An Early Ordovician tonalitic-granodioritic belt along the Schistose-Greywacke Domain of the Central Iberian Zone (Iberian Massif, Variscan Belt). *Geol. Mag.* doi: 10.1017/S0016756811001129.