5.4.P18

Magnetic susceptibility and Zircon tipology of a magnetite and ilmenite type-granites (Northern Portugal)

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A magnetic susceptibility (K) and a typlogical study in zircon fractions was carried out in late Variscan granites (298±12Ma) [1] from Northern Portugal, the "Lavadores granite" (LG) and the "Castelo do Queijo granite (CQG).

The emplacement of these granites was controlled by one of the oldest structures crossing the Variscan basement in Northern Portugal, the Porto-Tomar shear zone. This crustal anisotropy corresponds to the border of two main geotectonic zones of the Iberian Massif, the Central Iberian and Ossa Morena Zones.

LG and CQG are coarse to medium-grained biotite porphyritic monzogranites, with magnetite and ilmenite as opaque oxide minerals respectively; the former has a pink colour and contains abundant microgranular enclaves with a wide range of compositions.

The petrogenetic indications given by zircon typological study [2] permit to characterise the LG as a calc-alkakine potassic granite or subalkaline magnesiopotassic. This signature suggests an hibridisation process for LG genesis, involving an enriched mantle-derived magma and a felsic crustal magma, which is supported by the presence of microgranular ultrapotassic enclaves and isotopic data (Sri_{298}=0.7045 and εNd_{298}=-1.04). The CQG define a typological evolutionary trend more typical of the subalkaline ferropotassic granites which are in accordance with the biotite composition. For the origin of this kind of granites, a mixing model between alkaline and calc-alkaline magmas are proposed [3].

In LG, K magnitude (1662×10^{-6} SI) is controlled by the ferromagnetic fraction whereas in CQG K magnitude (10×10^{-6} SI) is controlled by the paramagnetic fraction. The K value for LG higher than 10^{-3} SI [4] allow to consider LG as the first Variscan typical magnetite-type granite described in Portugal according to Ishihara classification [5].

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5.4.P19

Petrological features of an ignimbrite flow unite: Incesu ignimbrite Turkey

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The thickness, top-bottom compositions, relations and phenocrystals shapes of ignimbrites bear very important clues related to volcanic activities, emplacement processes and depositional environments. In this study top and bottom levels of Incesu ignimbrite have been examined in an attempt to distinguish the two levels by using their textural features, mineralogical and geochemical compositions. Incesu Ignimbrite has 10 meters thickness with calcalkaline composition. The top of the ignimbrite has well defined heterogeneous composition than the bottom of the flow unit indicating different composition of the top and bottom.

Introduction

Incesu ignimbrite represents a part of Central Anatolia Volcanic Province (CAVP). The CAVP is formed as extensional tectonics and complex transtensional and consists of some small centers, several large strato-volcanoes and an extensive ignimbrite pile [1] [2].

Geology and Petrography

Incesu ignimbrite is classified from the top to the bottom into 3 different parts. 1) Upper part is grey pinkish in colour, poorly welded, more complex texture and volcanic rock fragments with almost 2 m thickness. 2) Mid part has reddish pinkish, flatness pumice clasts, well welded with almost 7 m thickness. 3) The most bottom part is blackish brown colour, mostly classy inquiry, less flatness pumice clasts, extremely altered with almost 2m thickness.

Nature of Incesu Ignimbrite

The top-bottom levels of Incesu ignimbrite can be distinguished and depositional characteristics of the region can be determined using their petrographyical and geochemical features. Incesu ignimbrite has calcalkaline composition and has similar composition with the upper crust.

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