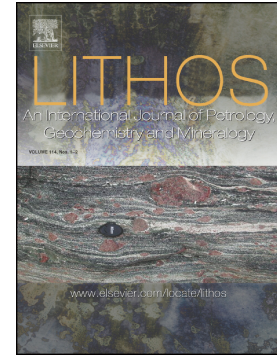


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Source constraints on the genesis of Danubian granites in the South Carpathians Alpine Belt (Romania)

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ABSTRACT

The pre-Alpine basement of the Lower Danubian nappes in the South Carpathians is made up of two Precambrian terranes (Drăgășan and Lainici-Păiuș) that were intruded by Pan-African/Cadomian and Variscan granitoid massifs. We focus on the major and trace element geochemistry (1) in the Drăgășan terrane, of the Variscan Retezat and Parâng intrusions; (2) in the Lainici-Păiuș terrane, of the Variscan Furcătura, Petreanu and Frumosu intrusions and of the Pan-African Vârful Pietrii, Șușița and Olteț granites and granitic leucosomes of migmatites; and (3) in the Upper Danubian nappes basement, of the Variscan Muntele Mic, Sfârdin, Cherbelezu and Ogradena intrusions. For each intrusion, in which a range of composition is observed, we decipher the differentiation mechanisms (fractional crystallization, hybridization, melt laden with restite minerals, etc.) in order to define the parental liquid compositions. The latter are calc-alkaline to alkali-calcic (except Olteț that is calcic) and medium to high-K in composition. With $[La/Yb]_N > 10$ and $Sr/Y > 15$, most melts display the so-called

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