

Abstract

The Weinsberg Composite Pluton, located in the southern part of the Moldanubian Batholith is a large intrusive body with complex internal fabrics, petrogenesis and emplacement processes. On the basis of geochemistry and zircon morphology classification the dominating lithology in the northeastern part of the pluton seems to be the second type of the Weinsberg granitoids (WbG II). Based on the integration of the structural, petrological and geochemical data set acquired from the investigated area, the interpretation of geodynamic evolution and emplacement of the eastern part of the Weinsberg Pluton could be proposed. This interpretation invokes: (a) indentation and underthrusting of a continental microplate (Brunia) in the east at around ~340–330 Ma, driving mantle delamination and subsequent heating and anatexis in the metapelitic lower crust as the heterogeneous source for Weinsberg- and Eisgarn-types of granitoids; (b) subsequent growth of a large metamorphic dome along the edge of the Brunia indenter followed by polyphase emplacement of entire eastern part of the Moldanubian Batholith around ~330–325 Ma including the Weinsberg Composite Pluton in the south; (c) increasing role of the N–S shortening and associated NW–SE dextral shearing along localized shear zones which caused the prevailing WNW–ESE trending magmatic fabrics in Weinsberg Pluton; (d) minor subvertical shortening as the result of later stages of domal exhumation and subsequent low-temperature localized deformation and mylonitization along the eastern edge of NNE–SSW trending domal structure (polyphase Vitiz-Přibyslav Mylonite Zone).