



Magma emplacement into exhumed lower- to mid-crustal orogenic root: the Jihlava melasyenite pluton, Moldanubian Zone, Bohemian Massif

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Based on structural and AMS data from the ~337-335 Ma Jihlava melasyenite pluton, (Moldanubian Zone, Bohemian Massif) we show that multiple spatially variable material transfer processes (ductile host rock shortening, formation of sheeted zones by magma wedging, magmatic stoping, and possibly host rock displacement within a wide transtensional zone) accommodated emplacement of the pluton. Two widespread magmatic fabrics preserved in the pluton reflect both internal processes and regional strain increments during late stage of pluton cooling. The margin-parallel foliations, which likely formed by strain during emplacement of inner magma pulses, were overprinted by cross-cutting foliations which recorded increment of tectonic strain within a zone of distributed transtension. We demonstrate that the ultrapotassic melasyenite plutons which are widespread throughout European Variscides are structurally complex bodies emplaced by multiple processes. We suggest that careful determination of temporal and geometrical relationships of structures in and around these plutons may provide important constraints for kinematic framework, local exhumation histories and timing of tectonic processes in different segments of the orogenic root during later stages of the Variscan Orogeny.