

## Mantle domain boundary beneath the Jicin Volcanic Field, Czech Republic: evidence from isotopic composition of primitive alkaline basaltic rocks

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The Jicin Volcanic Field is situated on the southern shoulder of the Oligocene-Miocene Eger Rift, some 30-60 km from its southern margin and is dominated by scattered erosional remnants of monogenetic volcanoes in NE Bohemia (Czech Republic). The volcanic field mostly consists of scoria- and tuff-cones, a handful of lava flows and lava lakes filling phreatomagmatic craters, and several dykes exposed by selective erosion. Volcanic activity in this area took place in two distinctive periods. Most volcanoes were formed during the Miocene (16-19 Ma) whereas few cones grew up during the Pliocene (4-5 Ma). Primitive members predominate among the erupted magmas of within-plate alkaline character. These are represented by olivine nephelinites and basanites/limburgites with rare picrobasalts. Models of mineral composition suggest that the picrobasalts are derived from basanites through accumulation of ca 15% olivine. Despite relatively uniform major and trace element compositions, significant differences in radiogenic isotopic compositions are observed. The  $^{87}\text{Sr}/^{86}\text{Sr}$  (present-day) ratios for the southern part of the volcanic field are higher than 0.7035 whereas they are strictly limited to lower than 0.7035 in the northern part. In parallel,  $^{143}\text{Nd}/^{144}\text{Nd}$  ratios are higher than 0.51285 for magmas erupted in southern part and lower than this value in the northern part. Collectively, magmas erupted in the northern part of the Jicin Volcanic field are isotopically similar to main volcanic complexes of the Eger Rift, whereas the southern part is obviously derived from a more depleted mantle source. Both groups of basaltic rocks erupted in the Jicin volcanic field are also distinguished by their Pb isotopic compositions. Both suites plot in two parallel trends in the  $^{208}\text{Pb}/^{204}\text{Pb}$  vs.  $^{206}\text{Pb}/^{204}\text{Pb}$  diagram, where the northern part is relatively enriched in  $^{208}\text{Pb}$  compared to the southern part. We explain more depleted character of the source mantle for the southern part of the Jicin Volcanic field in the context of greater distance from the Eger Rift and, therefore, also from the Variscan suture between Saxothuringian and Bohemian domains, which could modify the mantle composition in the zone of Eger Rift.