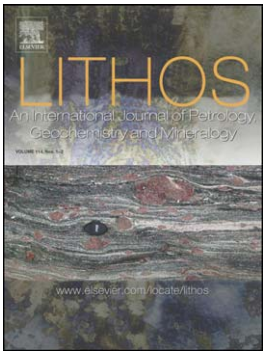

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Slab-derived metasomatism in the Carpathian-Pannonian mantle revealed by investigations of mantle xenoliths from the Bakony-Balaton Highland Volcanic Field

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Abstract

A suite of fifteen peridotite xenoliths from the Bakony-Balaton Highland Volcanic Field (BBHVF, Pannonian Basin, Central Europe) that show abundant petrographic evidence of fluid and melt percolation were studied in order to decipher the formation of their melt pockets and veins. The suite mainly consists of "fertile" lherzolites (5.8-19.9 vol. % clinopyroxene) and a few harzburgites (1.9-5.4 vol. % clinopyroxene) from well-known localities (Szentbékkálla, Szigliget) and two previously unreported localities (Füzes-tó and Mindszentkálla). Major and trace element data indicate that most of the peridotites record variable degrees of partial melt extraction, up to > 15% for the harzburgites. Subsequently, the xenoliths experienced at least two stages of metasomatic modification. The first stage was associated with percolation of a volatile-bearing silicate melt and resulted in crystallization of