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**The first report of a zircon bearing mantle xenolith from Central Europe – a petrological curiosity**

Modal metasomatism of the subcontinental lithospheric mantle is commonly characterised by the addition of new phases to the pre-existing peridotitic material. Amphibole, mica or apatite are relatively common metasomatic phases whereas rutile and zircon are rare, and most commonly associated with MARID (mica-apatite-rutile-ilmenite-diopside) type metasomatism, related to kimberlitic volcanism. Both modal and cryptic metasomatism related to either the host alkaline basaltic magmatism or to an earlier calc-alkaline event have been identified from the Bakony-Balaton Highland Volcanic Field (BBHVF) xenolith suite from the Western Pannonian Basin. Modal metasomatism is most commonly manifested as enrichment in clinopyroxene or amphibole less commonly in orthopyroxene and in the form of silicate melt pockets and melt inclusions. To our knowledge apatite, rutile, ilmenite or zircon have not been described as metasomatic phases in BBHVF upper mantle xenoliths before, moreover zircon was only found in mantle rocks in the Finero peridotite complex in Europe.

In this talk I will present the petrographic and geochemical characteristics of an apatite-bearing olivine-pyroxene-amphibolite vein preserved in amphibole harzburgitic wall rock. The sample was collected from Szigliget locality of the BBHVF. This peculiar xenolith also contains rutile, ilmenite, zircon and sulphide globules as accessory phases. I demonstrate that the vein is the product of extreme degree of fractional crystallisation of an alkali basaltic melt compositionally similar to the host basalt. This crystallisation happened in the upper part of the lithospheric mantle under oxidising conditions.