Volcanology of polar and subpolar regions (Faroe Islands, Iceland, Greenland, Antarctica)

What are the primary contents of Hg in volcanic rocks?

Assoc. Prof. Dr. Lukáš Krmíček[1,2,3]
lukas.krmicek@gmail.com

[1] Department of Geological Sciences, Masaryk University, Brno, Czech Republic
[2] Institute of Geology of the Czech Academy of Sciences, Prague
[3] Institute of Geotechnics, Brno University of Technology

Title
Volcanology of polar and subpolar regions (Faroe Islands, Iceland, Greenland, Antarctica)

Subtitle
What are the primary contents of Hg in volcanic rocks?

Abstract

Polar and subpolar regions represent a unique environment for the study of mercury cycling in the global ecosystem. My research in the past years was focused on the assessment of the origin and mobility of mercury in the geochemical cycle by means of atomic absorption spectrometry. The study was performed on:

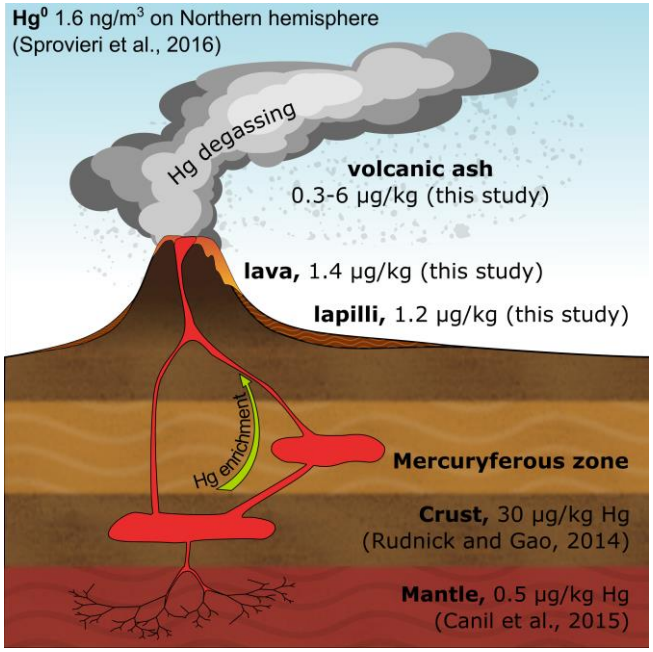
1) tholeiitic basaltic lavas associated with the opening of the northern part of the Atlantic Ocean (Faroe Islands, Greenland)

2) tholeiitic to alkaline basaltic lavas related to interaction of a mantle plume hotspot and a spreading plate boundary between N. American and European plates (Iceland)

3) back-arc alkaline basaltic lavas of the James Ross Island Volcanic Group in maritime Antarctic region (James Ross Island)

The mercury content in both alkaline and tholeiitic basalts indicates a very low concentration of mercury in peridotitic mantle sources. Additionally, the obtained results are about two orders of magnitude smaller than values formerly assumed for primary mercury contents in basaltic lavas.

On the background of the main topic of my talk, various volcanological phenomena, that can be seen in volcanic rocks from polar and subpolar regions, will be presented there.



Model of Hg flux from the Earth's crust into the ecosystem (Coufalík & Krmíček, *in review*).