

First experience with research in the Arctic: How to become a polar scientist easily and quickly and why we studied stable Pb isotopes there

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We first reached the Arctic Circle in 2016 in Kirkenes, Norway. Our mission was devoted to geochemical studies of transboundary nickel pollution in Russia. The frosty, peaceful landscape became our love at first sight. Three years ago we returned to the Arctic, this time to Longyearbyen in Svalbard. Being there was a long time dream of mine because I read the story of the Italia 1928 expedition as a little boy. Since we were not polar scientists, we needed to gather a lot of information. Our base was the Czech Research Polar Station. The scientists helped us get all the residence permits and weapons and showed us important places for our research. There we extended our previous studies with transboundary pollution and natural background studies. We have used stable isotope ratios to track sources (local or distant) in a pristine arctic region. We focused mainly on snow (recent) and lichens (integrated over several years) and stable Pb isotope ratios. Ideally, each source differs in its Pb stable isotope ratio, which is the signature of the source. As preliminary results, we found very different Pb isotope signatures in the valleys of Svalbard. This is clear evidence of the various sources affecting the pollution of the Arctic region.

After a full-day trip on a snowmobile and sample processing, there was still time for a demonstration of culture and customs. The Czech Research Polar Station is very well suited for cross-cultural transfer, so during the social evening our foreign guests were served typical Czech sweet dumplings with plum jam. Becoming a polar scientist is easier if you have cooking skills.