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# Trace metal legacy on mountains aquatic ecogeochemistry: TRAM

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## Abstract

Due to their geological features, mountain environments have been exploited since the beginning of metallurgy. The Pyrenees are no exception as many mining sites in the region have been dated back to the Bronze Age thus allowing a potential human impact on the environment on millennial scales. The mountain critical zone is sensitive both to human-induced environmental changes - e.g. agriculture, mining, clear cutting- and climate-induced rapid environmental fluctuations. The legacy of trace metal stocked within the mountain critical zone is poorly understood and Pyrenees besides provide a perfect mountain range for detailed scientific investigations of the fate and the impact of those potential harmful trace elements on the ecological functioning of mountain catchments.

In this presentation, we will show how the TRAM project is, in our opinion, a promising interdisciplinary and integrative project to face the different following challenges:

- 1) TRAM will assess changes in the introduction and transfer of PHTE over millennia, using innovative geochemical and isotopic tracers,
- 2) TRAM will further combine a geochemical approach with ecological analyses to define the impact of PHTE on biodiversity and ecosystem services,
- 3) TRAM will develop a range of indicators to make the impact of PHTE on the mountain critical zone clearer to decision makers and stakeholders, considering also hydrological, biogeochemical modelling and GIS analyses.

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