IsoNose - isotopic tools as novel sensors of Earth surfaces resources – a new Marie Curie initial training network

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The Marie Curie Initial Training Network »Isotopic Tools as Novel Sensors of Earth Surfaces resources – IsoNose« is an alliance of eight international partners from science and industry, comprising 12 PhD students and 2 postdocs

In the last 15 years advances in novel mass-spectrometric methods have opened opportunities to identify "isotopic fingerprints" of virtually all metals and to make use of the complete information contained in these fingerprints. While the feasibility of these new tools has been demonstrated by now, the derivation of robust geologic and environmental information from their application requires substantial additional efforts.

IsoNose will focus on three major Earth surface resources: soil, water and metal resources. Novel stable isotope techniques will disclose the processes generating (e.g. weathering, mineral ore formation) and destroying (e.g. erosion, pollution) these resources. Within this field the following questions will be addressed and answered: (1) How do novel stable isotope signatures characterize weathering processes? (2) How do novel stable isotope signatures trace water transport? (3) How to use novel stable isotope as environmental tracers? (4) How to use novel stable isotope for detecting and exploring metal ores? (5) How to improve analytical capabilities and develop robust routine applications for novel stable isotopes?

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