

Mass transfer in the interior of rocky planets

- Mass transfer in the interior of rocky planets is difficult to understand because deep crustal and mantle rocks rarely outcrop at the surface
- One of the few areas where the lower crust and upper mantle are exposed on Earth is the Ivrea-Verbano Zone (IVZ) in the Italian Alps
- We studied a unique series of volatile-rich conduits that connected the mantle to the crust 250 million years ago and now outcrop as solidified rocks
- Subduction created volatile-rich pods in the mantle that, because of their high volatile contents, are easier to melt than the surrounding, drier rocks
- When these pods are molten, conduits form that are a very effective way to transfer heat, volatiles and other elements between different layers of differentiated bodies

Locmelis et al. (2016) Lithos

