

Isotopic disequilibrium of Elba Island intrusive sequence: An heritage of melting process at source?

Isotopic disequilibrium among different mineral phases in “granitoid” rocks are very common!

What isotopic disequilibrium tells us ?

Igneous minerals preserve the isotopic evolution history of the magma from which they crystallize.

That means:

If the sequence of crystallization is known isotopic variations can be used as recorders of the evolution of the magmatic system.

How the isotopic disequilibrium forms?

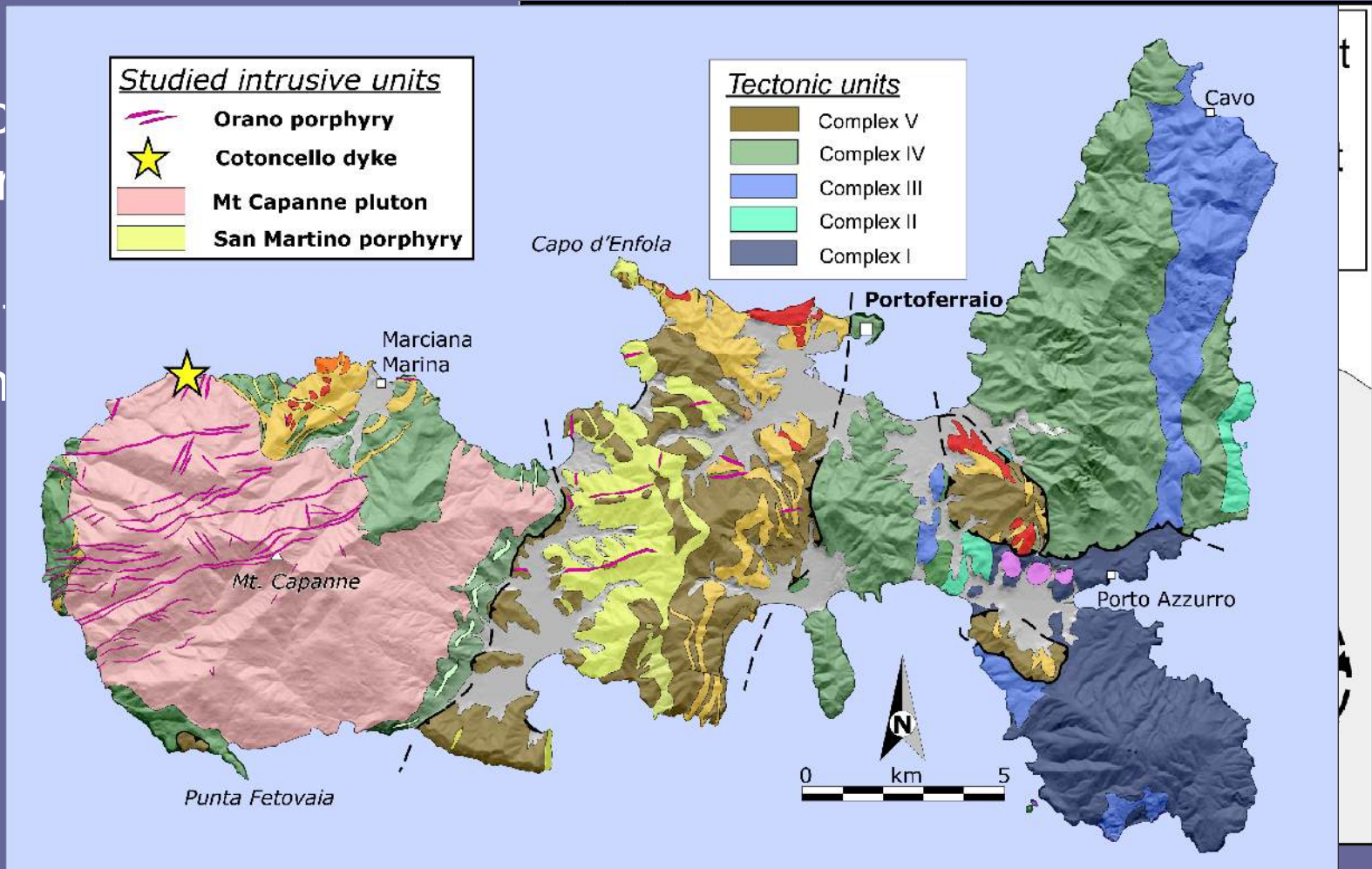
- Isotopic disequilibrium are generally interpreted as the results of various processes taking place during magma ascent or emplacement/eruption.
- But...experimental studies on natural rock and artificial analogous show how **isotopic disequilibrium can be the results of the partial melting process of the source rock.**



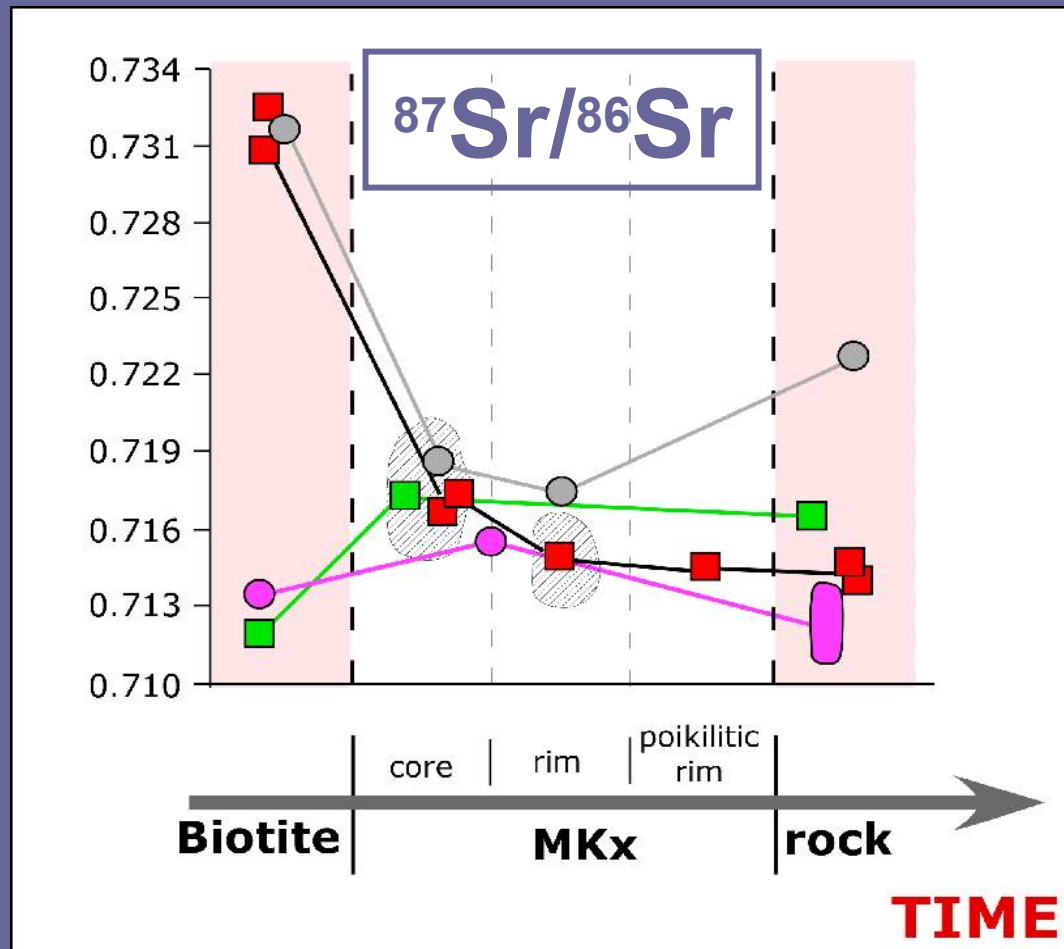
Stoichiometry of melting reaction

Elba Island

- Is c
differ
- All
main

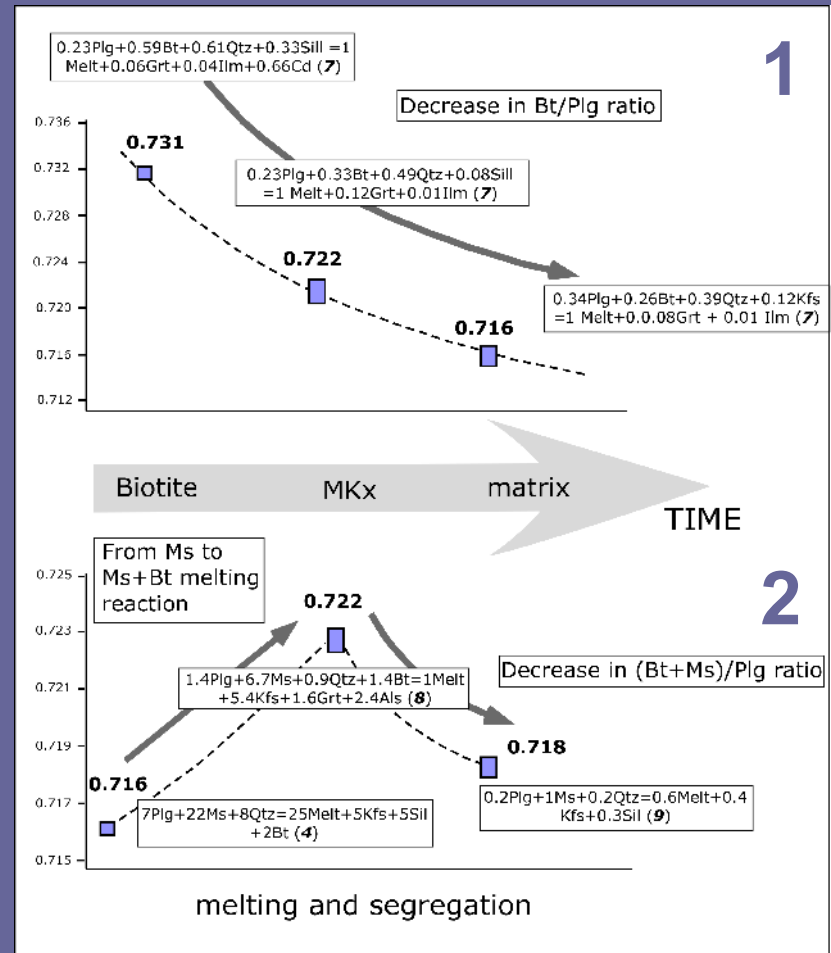
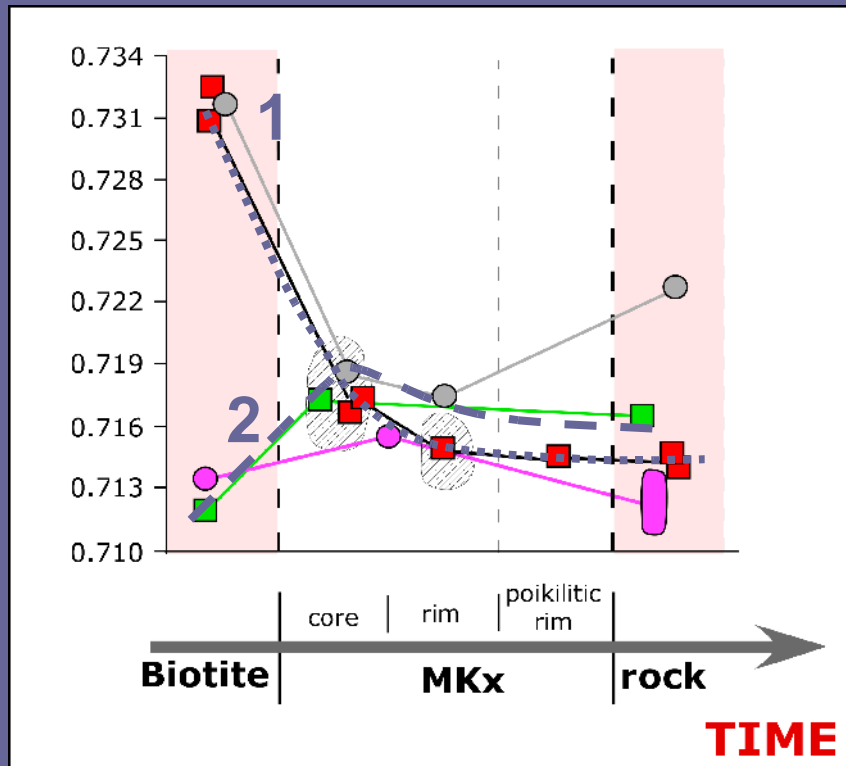


Isotopic disequilibrium



Nd and Pb isotopes are also performed!!!!

Disequilibrium partial melting- a model



Thank you !

