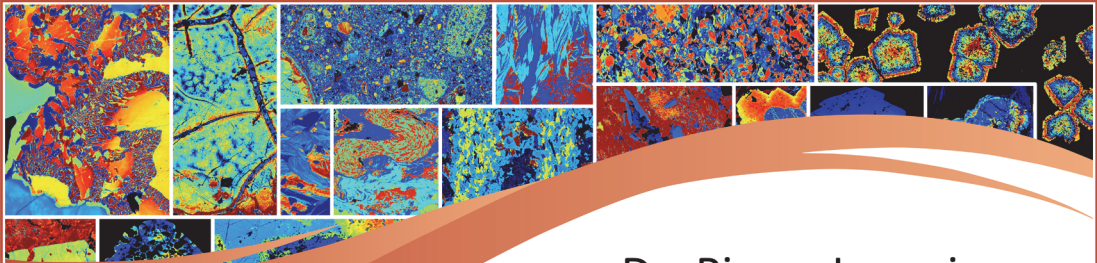


Friday, February 01, 2019
11h15 – room 001
Department of Earth Sciences, University of Geneva



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New approaches for modeling metamorphism

  XMapTools 

The astonishing progress of personal computer technology in the past 30 years as well as the availability of thermodynamic data and modeling programs have revolutionized our ability to investigate and quantify metamorphic processes. Equilibrium thermodynamics has played a central role in this evolution, providing simultaneously a physico-chemical framework and efficient modeling strategies to calculate mineral stability relations in the Earth's lithosphere (and beyond) as well as thermobarometric results. However the validity of the most advanced petrological models must be tested against the natural record. In this talk, I describe a new modeling strategy based on iterative thermodynamic models, integrated with quantitative compositional mapping. This technique provides a powerful alternative to the traditional modeling tools and permits to use local bulk composition for testing the assumption of local equilibrium in rocks that were not fully re-equilibrated during their metamorphic history.