

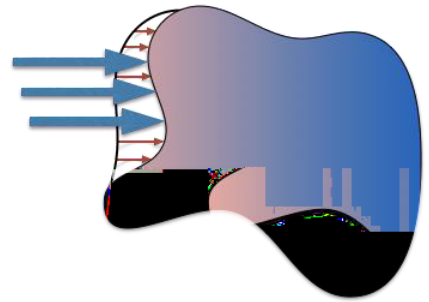
# 地球动力学数值模拟公

- Comments on Finite Differences for the flow problem
- Multiphase flow problems.
- Goals
  - Understand the numerical solution of a simplified heat equation using Finite Differences (FD)
  - Understand the concept of stability of a numerical scheme

## Dec. 5<sup>th</sup>

### Class 4 Physical properties

- Content
  - Physical properties of rocks.
  - Rheology. How rocks deform: Viscosity, Elasticity and Plasticity.
  - Density. Different models for density.
  - Dependence of viscosity and density on temperature, pressure, strain rate, etc.
  - Advanced topic: mineral physics and computational petrology.
- Goals
  - Get familiar with basic concepts of rheology
  - To understand the role of rheology in the computational cost of numerical simulations.
  - Models for other physical properties of rocks
    - Density
    - Thermal expansivity
    - Thermal conductivity



## Dec. 6<sup>th</sup>

### Class 5 Numerical Studies

- Content
  - Thermal evolution of the Oceanic Lithosphere.
  - Subduction dynamics and the origin of Andean orogeny.
  - Coupled mantle dripping and lateral dragging controlling the lithosphere structure of the NW-Moroccan margin and the Atlas Mountains

