GEO111 – NUMERICAL SKILLS IN GEOSCIENCE

week #06: Basic geochemical box modelling and reservoir dynamics

Monday 2nd May 2016

The purpose of this week is to learn how to build simple numerical models.

Work plan

Work through the first subsections (Introduction, Box models) of Chapter #4 ('Introduction to numerical modelling') of the GEO111 course handout. Also the supplemental 'lab.pdf' document (material not yet translated into the GEO111 course handout latex document format ...).

A little relevant background material can be found in:

- **MATLAB®7 – Getting Started Guide**
  - *Matrices and arrays* – pages 2-20 through 2-23
- **MATLAB – A Practical Introduction to Programming and Problem Solving**
  - *Matrix multiplication* – pages 57-59

Learning goals (aka: 'what specifically should I have got to grips with?')

Topics and methodologies you should be familiar with:

- time-stepping in models
- basic numerical integration schemes, concept of numerical stability
- basic matrix maths and the use of the inverse matrix