

# Environmental Modelling: Evaluation Procedure

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## Assessment: Two Stages

- ① Oral Examination — 50% of the grade
  - One theoretical question (15' prep. + 15' examination)
  - One application exercise (1 h prep. + 15' examination)
  
- ② Personal project — 50% of the grade
  - “Do-It Yourself”
  - “Rent and Drive”

## Personal Project: “Do-It Yourself”

- Programming required
- Programming language of *your* choice
  - Recommended: Fortran, IDL
  - Limited assistance: Matlab, Octave, Python
  - At your own risk: C, C++, Java, R, ...
- To hand in
  - Codes (including small `readme.txt` about how to run)
  - Report with results and discussion (~10 pages)
  - ...

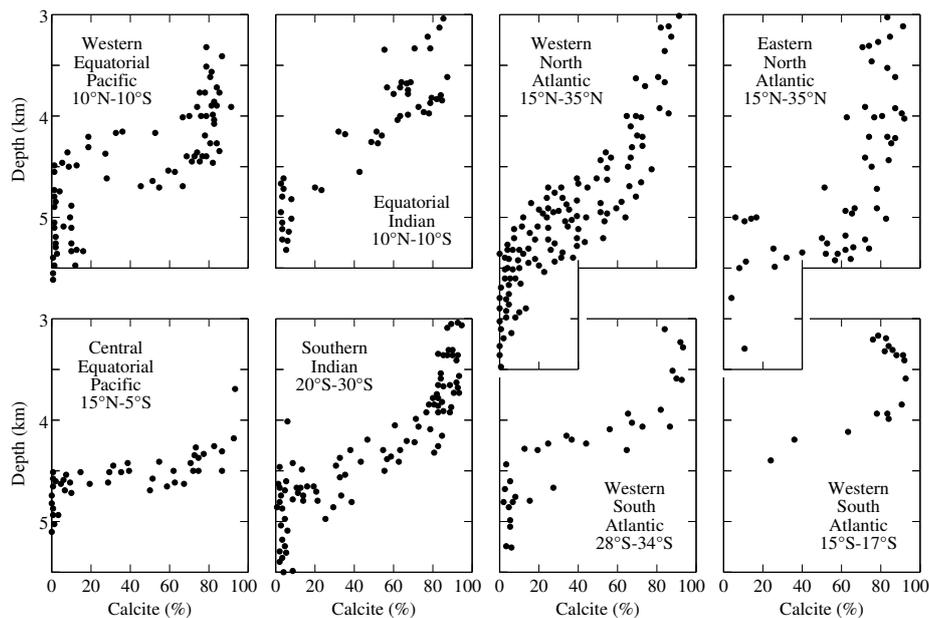
## Personal Project: “Rent and Drive”

- Model provided
  - Code to install and run on your own computer
  - Virtual machine with code pre-installed and configured, for installation on your own computer
  - Access to computing servers with necessary software installed
- No coding or small adaptations only — Emphasis on results and discussion
- To hand in
  - Report with results and discussion (~10 pages)

# Personal Project: Subjects

- Energy Balance Model – to build
- GEOCARB (Berner et al., Am. J. Sci. 1991) – to build
- Vegetation Model – to apply
- Evolution of CO<sub>2</sub> in the atmosphere – to adapt and apply
- Sediment Model MEDUSA
- ...

# Personal Project: Sediment Model Application



Broecker and Peng (*Tracers in the Sea*, 1982)

- “Rent and Drive”
  - virtual machine
  - source code to install and compile
- Complete instruction manual
  - presentation of the scientific question addressed
  - spectrum of simulation experiments to chose from
  - detailed instructions about how to perform the simulation experiments
- Possible platforms
  - Linux: native
  - Windows: with Cygwin or virtual machine
  - MacOS: native if compilers and dependencies installed or via virtual machine
- post-processing (graphs etc.)
  - IDL, Matlab, Octave, LibreOffice, Excel, ...