

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)
 - ...

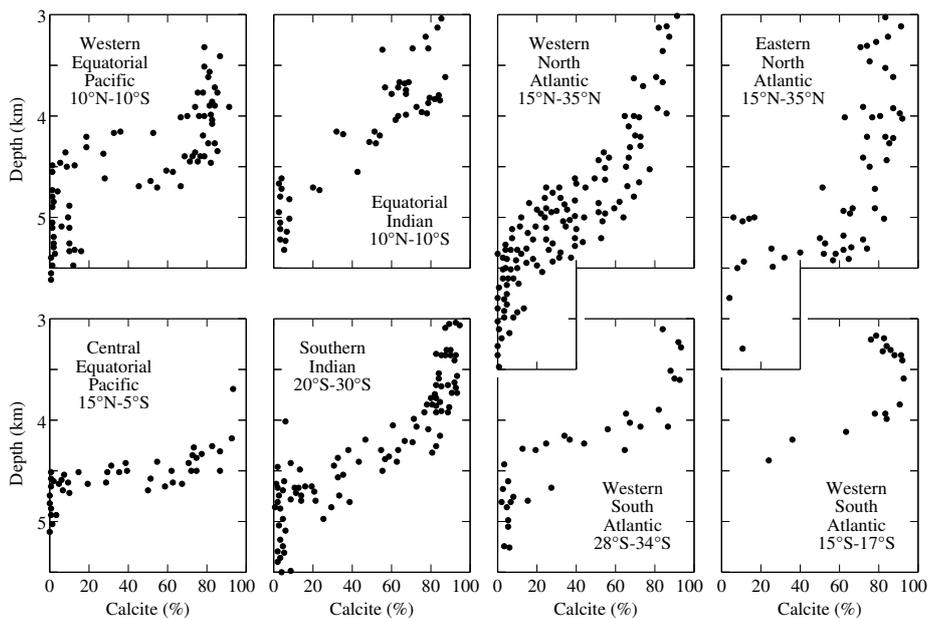
Personal Project: “Rent and Drive”

- 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 CO₂ in the atmosphere – to adapt and apply
- Sediment Model MEDUSA
- ...

Personal Project: Sediment Model Application



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

Personal Project: Sediment Model Application

- “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, ...