Schedule for GERM Modeling Workshop

Date: 19 May 2003
Location: Multimedia Room E0014 (ground floor)

08:15 Coffee and setup with computers.

08:30 **Lou Derry** Basic concepts in reservoir modeling: residence time, response time, steady state and periodic forcing.
   
   *Exercise 1 with MATLAB — Introduction to graphics: plotting analytical solutions.*

09:15 **Lou Derry** Multiple reservoirs: steady state solutions, non-steady state solutions, the eigenvalue problem, real problems and complex eigenvalues.
   
   *Exercise 2 with MATLAB — Solution of simultaneous equations, extraction of eigencomponents.*

10:00 Coffee.

10:15 **Lou Derry** Numerical approximation using MATLAB: Introduction to the ODE solver.
   
   *Exercise 3 with MATLAB — numerical solution of coupled non-linear ODEs.*

11:00 **Yves Godderis** Description of the global carbon cycle, continental silicate weathering and the climate: an useful but still poorly constrained negative feedback. How to calculate atmospheric $P_{CO2}$ and climate through time: an example with a 0D model?

12:00 Lunch break.

01:00 **Yves Godderis** Can we trust global carbon cycle models? The importance of degassing forcing functions, the correlation between the global climate and atmospheric $P_{CO2}$ and the strontium isotopic ratio of seawater. Can we improve global carbon cycle models? What is the lithological effect in carbon cycle models? What is the role of mountain uplift in physical erosion? Coupling geochemical models to climate models: from 0D to (almost) 3D. The use of isotopes in global carbon cycle models: basic concepts and evolution of isotope ratios in models.

02:30 Coffee.
02:45  **Bernard Bourdon** Introduction to U-series: decay equations, basic concepts and some analytical solutions for a closed system.

03:15  **Bernard Bourdon** Dating with U-series: dating with U-Th-Pa “simple” open-system models.

03:45  **Bernard Bourdon** Modeling two-phase flow systems: a guided tour including dynamic, equilibrium and double porosity melting models; transport of nuclides in aquifers; simple models for chemical weathering using U-series.

05:15  Ice Breaker and Posters (in the basement of the school).
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<th>Time</th>
<th>May 20 in 2003</th>
<th>May 21 in 2003</th>
<th>May 22 in 2003</th>
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<tbody>
<tr>
<td>8:45 – 10:15</td>
<td>Welcoming Remarks</td>
<td>Subcontinental Lithosphere Structure</td>
<td>Recycling and Mantle composition</td>
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<td></td>
<td>Francis Albarede</td>
<td>Rob van der Hilst</td>
<td>Rick Carlson</td>
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<td>Introduction to Breakout Sessions</td>
<td>Subcontinental Lithosphere Composition</td>
<td>Solid Earth Water-Cycling</td>
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<td>Hubert Staudigel</td>
<td>Graham Pearson</td>
<td>Jacqueline Dixon</td>
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<td>Jason Phipps-Morgan</td>
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<td>10:45 – 12:45</td>
<td>Coffee Break</td>
<td>Mass Balances at Subduction Zones</td>
<td>Rivers and Erosion</td>
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<td>10:15 – 10:45</td>
<td>John Ludden</td>
<td>John Milliman</td>
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<td>Dehydration and Seismicity at Arcs</td>
<td>Christian France-Lanord</td>
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<td>Geoff Abers</td>
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<td>Aber-Ludden</td>
<td>Lou Derry</td>
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<td>13:15 – 13:45</td>
<td>Lunch Break</td>
<td>Meeting-room (ground floor)</td>
<td>Amphitheater A (4th floor)</td>
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<td>12:45 – 13:45</td>
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<td>CLOSED LUNCH MEETING</td>
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<td>Editors’ Round Table</td>
<td>Editors’ Round Table</td>
<td>The future of PetDB, GeoRoc, NavDat and GERM</td>
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<td>Rick Carlson, Anthony Koppers, Kerstin Lehnert, Hubert Staudigel</td>
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<td>Location of Breakout Sessions: See Detailed Program</td>
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**BREAK OUT SESSIONS**

**Editors’ Round Table**
Chair: Frank Podosek

**GERM Handbook**
Chair: Bill McDonough

**River Databases**
Chair: Lou Derry

**GERM Website Review**
Chair: Rick Carlson

**BREAK OUT SESSIONS**

**Editors’ Round Table**
Chair: Frank Podosek

**SAMPLES**
Chair: Steve Goldstein

**River Databases**
Chair: Lou Derry

**WORKING GROUP DISCUSSION**

**Editors’ Round Table**
Chair: Frank Podosek

**SAMPLES**
Chair: Steve Goldstein

**GERM Website Review**
Chair: Rick Carlson

**DATA COLLECTION**

**Coffee Break 15:30 – 16:00**

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**New Trends in Chemical Oceanography**
Ed Boyle

**Discussion Leader**
Francis Albarede

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**BioGeochemical Cycles**
Bill Schlesinger

**Discussion Leader**
Hubert Staudigel

**GERM Website Demo**
Anthony Koppers

**WORKING GROUP DISCUSSION**

**GERM Handbook**
Bill McDonough

**GERM Website Review**
Rick Carlson

**SAMPLES**
Steve Goldstein

**River Database**
Lou Derry

**18:00 Poster Sessions**
(in the basement of the School)

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**18:00 Wine Tasting**
(in the basement of the School)

**20:15 Conference Banquet**

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**End of Conference**

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Breakout Sessions

Five working groups will assemble in parallel breakout sessions on Tuesday and Wednesday (see below for detailed program). Session chairs will take on responsibilities of leading discussion segments, solving particular issues, and co-writing reports. Working groups will present their results and have an open discussion in the last plenary session and summarize their results in a final report, that may be used as “white papers” published on the GERM website and provided to NSF, or as conference reports in the Geochemical Newsletter or in EOS. Above all, however, we hope to advance all these issues in practice, in terms of proposals written, new working groups formed, new and updated editorial guidelines for data publication in geochemistry, or improving what GERM does for geochemistry.

We will address a very diverse set of issues that address key infrastructure problems in geochemistry, largely in parallel sessions, and there will be many participants who will have to make important contributions to more than one session. In this case, please get in touch with the breakout session chair, and express yourself, by e-mail before the meeting or during coffee breaks at the meeting in Lyon. You may be able to split your time between working groups and/or it may be useful if you would write a paragraph or two that expresses your concern or solution to a particular problem. The GERM organizers and the group chairs will make any effort to accommodate these concerns, but we rely on you to bring them to our attention.

A GERM Handbook of Geochemistry
Chair: Bill McDonough

Time: May 20, 2003, 13:45-15:30
Location: Amphitheater J (ground floor)

One of the major goals of GERM is to provide easy access to a great variety of chemical reference data, including the chemical composition and evolution of major geochemical reservoirs and fluxes between them. This session will discuss a book proposal that covers that need, in the form of a combined print- and world-wide-web resource. These discussions will include, in particular, the format and extent of the book as well as identifying individuals who will take on a major organizational role. A copy of a proposal for this “Handbook” will be included in the registration package.

SAMPLES: Sample Archive and Management PLanning for the Earth Sciences
Chair: Steve Goldstein

Time: May 21, 2003, 13:45-15:30
Location: Amphitheater I (ground floor)

Geochemistry critically depends on reliable preservation of data, but until recently attention has not been adequately paid to preservation of important terrestrial samples. This problem was addressed at GERM
2001. The recent NSF ISES-CI Workshop (Workshop on CyberInfrastructure for the Integrated Solid Earth Sciences) strongly recommended that, along with a scheme for data access and preservation, there must be a complementary policy on samples. Access to original samples is essential to make geochemistry a truly reproducible science. This breakout group will explore options and next steps towards insuring sample preservation and community access. A copy of an article on SAMPLES by Goldstein and Melson in the Geochemical News will be included in the registration package.

Editor’s Round Table
Chair: Frank Podosek

Open Discussion Forum (all invited)
Location: Amphitheater A (4th floor)

Closed Session (for Editors only)
Location: Meeting-room of Department SVT (ground floor)

Publishers and geochemistry editors will discuss current practices of data publication and how data publication in the peer-reviewed literature could improve and how it should relate to community database activities. The purpose of this meeting is to give editors an opportunity to discuss editorial policy amongst themselves (closed session) and with the GERM community present at the meeting (open Discussion Forum on May 21 and 22). Special attention will be paid to improving editorial guidelines that assure scholarly publication of all data or materials that are relevant to a publication. Publishers, editors and the community will discuss copyright issues regarding data publication in electronic or paper publications. A commentary on data publication by the GERM Steering Committee and some key metadata are included in the registration package.

Geochemical Database for Rivers
Chair: Lou Derry and Bernhard Peucker-Ehrenbrink

Location: Amphitheater K (ground floor)

Rivers are amongst the most deserving candidates for the development of a database in geochemistry. Currently there is no systematic global database effort that archives data on river chemistry and runoff, for dissolved or suspended load. Geochemical databases for rivers should be integrated with, or at least related, to data on geology, vegetation, rainfall and an elevation model of the river basin. The GERM river database committee will define the scope, data and metadata formats for such a database, and discuss options for the development of such databases. There will be handouts at the meeting.
GERM Website Review
Chair: Rick Carlson

Time: May 20, 2003, 13:45-15:30
Location: Meeting-room of Laboratory of Earth Sciences (ground floor)

The GERM website has developed from a static set of data tables to a relational database-driven, dynamic website that aims at satisfying a wide range of needs in geochemistry. The Website Review committee is charged with the mandate to evaluate the GERM website from an independent perspective and to solicit community criticism of the GERM website to guide future developments carried out by EarthRef.org.