Report on Global Iron Connections Meeting

This meeting took place in Norwich in the UK 18-21 April 2004. It was set up as part of the IGBP fast track activities to consider an analysis of the global dust/iron cycle cutting across conventional IGBP boundaries.

Attendees with appropriate expertise in particular aspects of the global dust/iron cycle were invited to participate with a target of 10-20 total attendees. We ended up with 19 participants, though two cancelled at the last minute because of health problems but remained fully engaged in the preparations for the meeting and the preparation of subsequent publications. The list of attendees is attached along with the agenda. The meeting was funded by IGBP via a grant from ICSU with additional funding from SCOR that allowed the participation of 3 young scientists from developing countries (Junji Cao, Nilgrun Kubilay and Rodrigo Torres).

The participants were asked to prepare papers for distribution ahead of the meeting summarising particular aspects of the dust/iron cycle. Modelling and field results were integrated in the reviews. These papers were then presented in an informal manner over the first two days of the meeting with extensive time allowed for discussion. These talks considered the dust cycle from source to sink, followed by a discussion of the cycle as revealed by palaeo records. The next two days of the meeting were devoted to synthesising the cycle in terms of what we do know and what we do not know.

The meeting format worked well, primarily because of the enthusiasm and commitment of all the participants to working across disciplines. I believe all found it very educational since nobody works across such a breadth of science. At the end of the meeting we discussed how to best achieve concrete products from the discussion. We concluded that we would attempt to produce 4 peer reviewed publications.

Tim Jickells
Meeting agenda
Sun 18 April
10-11  Introduction (Jickells, An Zhisheng)
Coffee
11.30-12.30  Dust Sources and Production (Bergametti, Brooks, Prospero)
Lunch
13.30-14.30  Dust transport and Flux Models (Mahowald Tegen)
14.30-15.30  Radiative Impacts (Brooks)
Coffee
16.00-17.00  Atmospheric Chemistry of Dust (Sulzberger)
17.00-18.00  Dust deposition and solubility (Baker, Duce, Jickells)

Mon 19 April
09.00-10.00  Ocean Chemistry of Fe (Hunter)
10.00-11.00  Ocean biological cycling of iron (la Roche)
Coffee
11.30-12.30  Trace gas exchange coupling to iron (Liss)
Lunch
13.30-14.30  Sediment records of dust fluxes (An Zhisheng, Junji Cao, Hodaka)
14.39-15.30  Ice core records of dust fluxes (Andersen)
Coffee
16.00-17.01  Dust in Earth System Models (Ridgwell)
17.00  Planning next step

I don’t want to prescribe the next two days of the meeting, I think that should be a collective decision but one possibility is that we meet on the Tuesday as three groups perhaps atmospheric, oceanic and palaeo and work to develop a consistent description of the dust/iron cycle. Then we might spend the afternoon considering the nature and scale of future changes and their impacts throughout the earth system. This should leave us in a position to form writing groups on the wednesday to prepare first drafts of the paper from the meeting. We will then meet in the afternoon and decide on plans for finalising the manuscript(s).

Participants
Alex Baker (UK), Giles Bergametti (France), Nick Brookes(UK), Junji Cao (China), Bob Duce(USA), Keith Hunter (NZ), Tim Jickells (UK), Hodaka Kawahata (Japan), Katrine Krogh Andersen (Denmark), Nilgun Kubilay (Turkey), Julie la Roche (Germany), Peter Liss (UK), Natalie Mahowald (USA), Joe Prospero (USA), Andy Ridgwell (Canada), Barbara Sulzberger (Switzerland), Ina Tegen (Germany), Rodrigo Torres (Chile), An Zhisheng (China).