W16. Model-data fusion: applications to carbon-climate-human and other systems

Summit on Environmental Modelling and Software, July 9-12, 2006. The Wyndham Hotel, Burlington, Vermont, USA

(http://www.iemss.org/iemss2006/welcome.html)

Due to the start of European Emissions Trading Scheme, United Nations' Clean Development Mechanism and other market instruments for controlling greenhouse gases there will be an incentive to under-report emissions and exaggerate carbon sequestering (Nature, 433: 683). An effective multinational program for atmospheric verification of the efforts on controlling atmospheric CO_2 concentration would not cost much, if the models of global carbon cycle will be improved to the certain level of credibility. Developing efficient model-data fusion techniques can do this.

Model-data fusion embraces a number of approaches for introducing observations into a modeling framework. They include inverse methods, data assimilation, parameter estimation, and constrained optimization. This workshop is to discuss

- 'Upscaling' methods (that is, methods for integrating local observations into a global scale model)
- The use of complex datasets for parameter estimation
- The use of information coming from wide range of observations for evaluating model consistency
- Evaluation of current and planned observing systems in terms of model-data fusion

NB. Numerical methods of model-data fusion are not specific to the carbon-climate-human system, and therefore those who are developing such methods with respect to other environmental problems are welcome to participate and share their experience.

Organizers will produce a rough draft of a Position Paper on the issues (opportunities, challenges etc.) by the end of November. All workshop participants would at least be required to have an abstract and may join in the review and authorship of the Position Paper. The Position Paper paper and abstracts will be peer-reviewed and pre-published in the Summit Proceedings before the Summit. The conveners of the Summit will reserve at least one book in the Elsevier IDEA Series that will publish a chapter on the findings of the workshop and its Papers.

Please, notify your interest to participate in the workshop, to join in the review and authorship of Position Paper, and send your vision of the issue to Georgii Alexandrov (g.alexandrov@nies.go.jp) by December 1, 2005. The preliminary abstract of you

contribution should be submitted by December 15, 2005. The final camera-ready abstract of your contribution should be submitted by March 24, 2006.

P.S. Burlington lies on the eastern shore of Lake Champlain between the Adirondack and Green Mountains. Burlington is one of America's most livable cities. There are great opportunities for hiking and camping in Vermont in Summer and enjoying the views of the mountains, forests and lakes.