

SWING

(Stable Water Isotope Intercomparison Group)

Project Summary

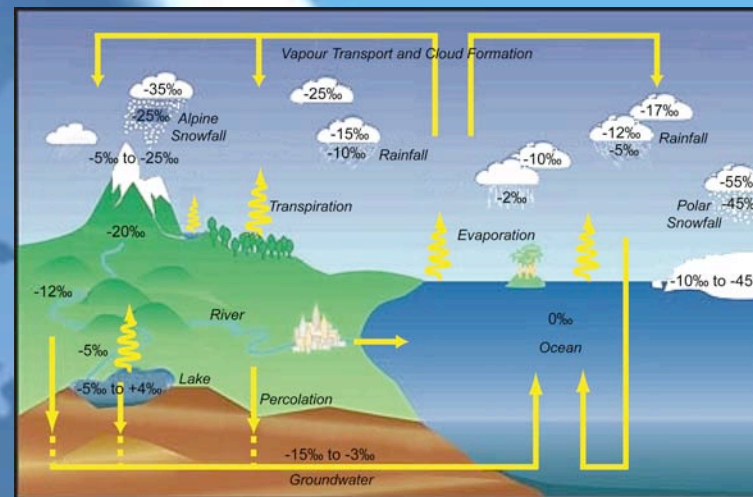
The general purpose of the SWING project is an international intercomparison of current state-of-the-art general circulation models with stable water isotope ($H_2^{18}O$, HDO) built into the hydrological cycle (so called Isotope GCMs) and related observational isotope data.

It brings together scientists with a common wide range of interest in both modelling and measuring stable water isotopes and its application to the Hydrological Cycle and Earth System problems.

Objectives

The SWING project will serve as a platform to explore the following topics:

- enable an overview about ongoing isotope GCM modeling capabilities
- serve as a platform for common isotope simulation experiments of the various research group (*model-model-intercomparison*)
- identify the most important need of new observational isotope data in space, time and the various aggregate forms of water (*model-data-intercomparison*)
- strengthen the linkage between the modeling community and the key contributors of observational water isotope data
- serve as an interface to other isotope model intercomparison studies, e.g. IPILS



Schematic overview of the hydrological cycle, as represented in most Isotope GCMs, showing approximate depletions in $\delta^{18}O$ of the different water reservoirs. [from: GNIP Brochure, IAEA, 1996].

SWING Consortium (Alphabetical Order)

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- Martin Werner (MPI Biogeochemistry, Germany)
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Cross-Linkage to Other Projects

- SWING is a working group of the GEWEX Hydrometeorology Panel (<http://ecpc.ucsd.edu/projects/ghp/>).
- IPILPS (Isotopes in Project for Intercomparison of Land-surface Parameterization Schemes) comprises the land-surface modelling component of the SWING project (for details see http://pilps.mq.edu.au/IPILPS_Proposal.pdf).

Further Information / Email Contact

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Experimental Design

- Phase I (2004/2005): First SWING simulations and analyses will focus on model-data-intercomparison for the present-day climate. Two new simulations (one climatology control run and one transient simulation spanning the last century) with all available isotope GCMs will be performed using identical boundary conditions based on the latest observational data sets (e.g. HadISST data).
- Phase II (2005/2006): The second SWING phase will focus on model-data-intercomparison for selected paleo time slices. Several periods of interest (LGM, YD, 8.2k) were already agreed on.
- In addition to performing isotope GCM intercomparison analyses, another key activity of the SWING project is setting up a common database of observational isotope data sets to be used for in-depth model-data comparison.

