IsoMAP: Isoscapes Modeling, Analysis, and Prediction

IsoMAP is a portal for spatial analysis and modeling of stable isotope data. Parameterize models. Develop maps. IsoMAP provides the data and data processing tools so you can develop and explore isoscapes quickly and efficiently. Our initial launch will feature the following content, with more to come in 2011:

Precipitation Isotope Ratios

IsoMAP will extend the prediction and data-distribution capabilities of the Online Isotopes in Precipitation Calculator at WaterIsotopes.org. Users will be able to adopt currently accepted models or develop and apply their own project-specific models to produce global or regional isotope climatologies or maps for specific time intervals. IsoMAP stores, extracts, and prepares model input data based on user specifications, and is driven by new geostatistical code that provides robust estimation of model uncertainty. Models and maps can be viewed within your browser using IsoMAP web-GIS services, or downloaded for further display and analysis on local systems.

Collaboration

At the user's discretion, models and maps can be published within the IsoMAP system, making them accessible to all IsoMAP users and facilitating re-use of results and collaborative development of analyses. All models and data products are documented through automated metadata capture within the system, enabling search and identification of content.

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Waterisotopes.org Update

Many of you have been using the interactive Online Isotopes in Precipitation Calculator on Waterisotopes.org for years. Although the basic interface and core functionality of the OIPC won't be changing, we will be changing what goes on behind the scenes. The detrended interpolation algorithm developed by Bowen and Revenaugh (2003) has been heart of the OIPC since its release. As part of the development of IsoMAP, our team has developed a new geostatistical algorithm that will improve the statistical rigor and functionality of the OIPC. In particular, the new code will reduce the computational overhead associated with uncertainty estimation, allowing us to provide estimates of uncertainty for all OIPC calculations (as opposed to estimates of long-term annual average values only). This is a functionality that has been requested frequently by users, and we hope it makes the OIPC more powerful for a range of users and uses.

IsoMAP IPhone App

Have you ever been at a party and found yourself wanting to share an estimate of local precipitation δ^2H or δ^{18}O values with your friends? This happens to us all the time. The IsoMAP app for the IPhone interfaces with your phone's GPS and mapping software, allowing you to build a database of water isotope estimates on your mobile device as you travel or in the field.

IsoMAP Tutorial – The Roles of Stable Isotopes in Water Cycle Research

Get familiar with IsoMAP at [the upcoming water isotope meeting](#) sponsored by the Biogeosphere-Atmosphere Stable Isotope Network. Come join us in Keystone, Colorado, where project members will be presenting the science behind IsoMAP and will offer a tutorial session introducing the portal and its operation. Bring your laptop and we will guide you through example modeling workflows and visualization of results. Your input and feedback are important to the project, and the BASIN meeting will be a great venue to ask questions and contribute your input to help drive the continued improvement of IsoMAP.