Alpen-DAZ Becomes AlpEnDAC - the International "Alpine Environmental Data Analysis Centre"

The “coming of age” of AlpEnDAC (www.alpendac.eu) – this could be the 2017 headline for our work on what began as a German “Alpen-Datenanalysezentrum (Alpen-DAZ)”, and then grew to be an international "Alpine Environmental Data Analysis Centre" for the entire VAO. This data storage, analysis, and simulation facility has now reached production status with its platform and easy-to-use web portal. The general beta test phase has ended, but further improvements will continue to be integrated into the running platform, without significant service interruption. Here, we give you a glimpse on what AlpEnDAC can do for you.

Research Data Storage and Management

With the needs of today’s scientists as a guideline, AlpEnDAC aims at resolving everyday problems: full hard disk drives; data lost or buried deep in the directory tree; other researchers waiting for your data. How can AlpEnDAC help you with all these problems?
AlpEnDAC gives you a well-organised data management platform for the invaluable results of your research. Uploading your data via the AlpEnDAC web portal or via scripts is a smooth process. You can share your data with other researchers using appropriate access rights, or you can restrict the access as required. In any case, your data is safe and you don’t need to worry about backups – all of this is done automatically.

Data Visualisation and Analysis

You can conveniently download or display your data in our “Data Explorer”, just like data of other users that you have access to. Our online plotting framework provides you with instant evaluation possibilities, such as displaying uncertainties and mean values with just a mouse click. We are continuously extending these capabilities according to the users’ requirements, so please give feedback.

Computing on Demand: Transport Simulations for Everybody

Furthermore, AlpEnDAC offers you numerically demanding simulations with one click via our simple-to-use web interface. With the aim of bringing models and data together, we enable you to run models that are immediately helpful for analysing your measurements.

Right now the focus of these simulations is on atmospheric transport modelling, which helps you to figure out where the air you're measuring at your site (e.g. UFS) is actually coming from. For this purpose, we use the codes FLEXTRA and FLEXPART as a backend (authors: A. Stohl et al., see www.flexpart.eu). A web interface for the alternative program HYSPLIT (by NOAA, see www.arl.noaa.gov/HYSPLIT.php) is in preparation. The availability of different programs for similar simulation tasks is part of AlpEnDAC’s mission: to offer you verification possibilities and foster quality and reproducibility in computational science.

Subsequent issues of this newsletter will contain detailed introductions to the various services.

Contact

Get an account on www.alpendac.eu today and try it out yourself. If you have questions or suggestions, don’t hesitate to contact Christoph Harsch (Christoph.Harsch@physik.uni-augsburg.de) or Stephan Hachinger (Stephan.Hachinger@lrz.de). The AlpEnDAC team at UAU, LRZ, DLR and UFS is looking forward to collaborate with you!

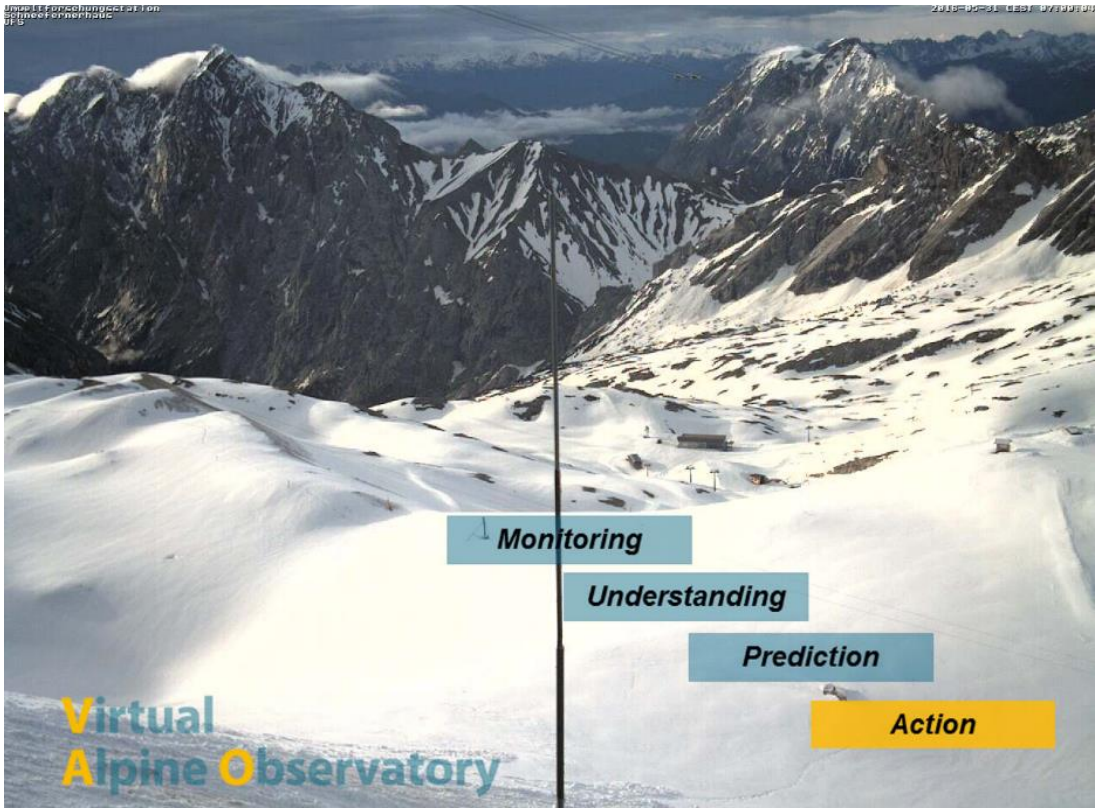

Figure 2: The Alpine Environmental Data Analysis Centre (AlpEnDAC) supports the VAO vision: Monitor the environment, understand and predict processes, and support mitigation actions.

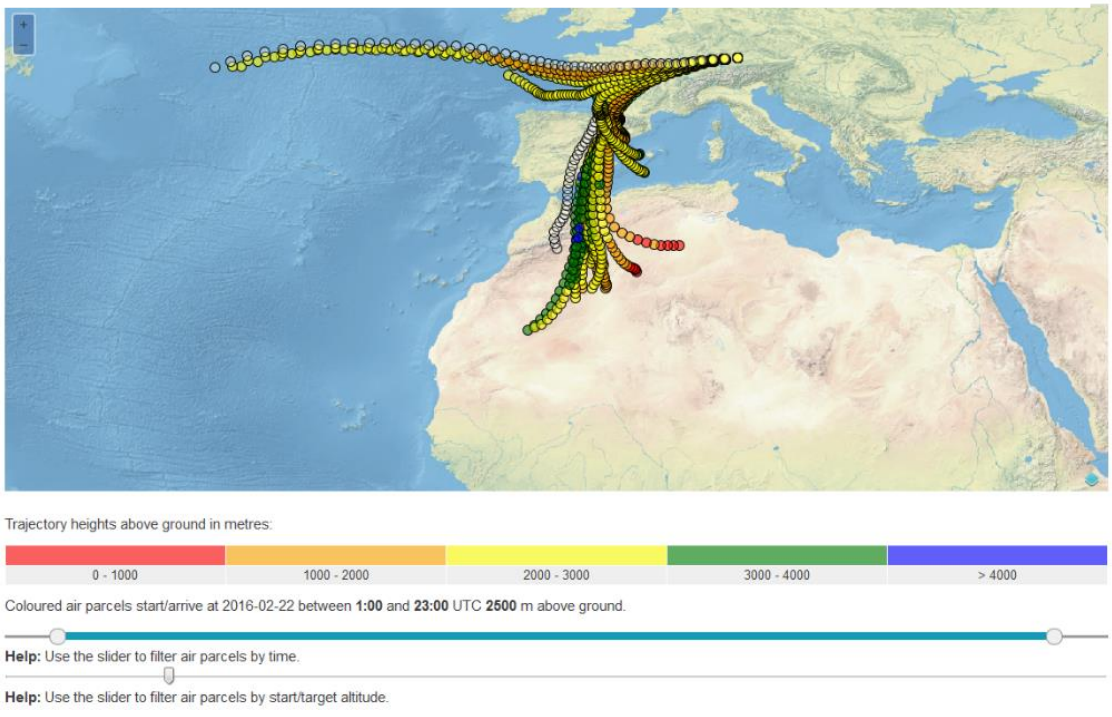

Figure 1: Interactive visualization of backward trajectories. The respective simulation was conducted on demand by an AlpEnDAC user for a time and location he/she specified. The trajectories requested arrive over Augsburg on 22.02.2016 between 0 and 15 km above ground. With sliders, the user can constrain arrival time and height of arrival of the trajectories visualised. On 22.02.16, Sahara dust was transported to Augsburg in altitudes of about 2-3 km above ground.