



WOD - Weather On Demand forecasting system

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The backbone of the Belgingur forecasting system (called WOD – Weather On Demand) is the WRF-Chem atmospheric model, with a number of in-house customisations. Initial and boundary data are taken from the Global Forecasting System, operated by the National Oceanic and Atmospheric Administration (NOAA). Operational forecasts use cycling of a number of parameters, mainly deep soil and surface fields. This is done to minimise spin-up effects and to ensure proper book-keeping of hydrological fields such as snow accumulation and runoff, as well as the constituents of various chemical parameters.

The WOD system can be used to create conventional short- to medium-range weather forecasts for any location on the globe. The WOD system can also be used for air quality purposes (e.g. dispersion forecasts from volcanic eruptions) and as a tool to provide input to other modelling systems, such as hydrological models. A wide variety of post-processing options are also available, making WOD an ideal tool for creating highly customised output that can be tailored to the specific needs of individual end-users. The most recent addition to the WOD system is an integrated verification system where forecasts can be compared to surface observations from chosen locations.

Forecast visualisation, such as weather charts, meteograms, weather icons and tables, is done via number of web components that can be configured to serve the varying needs of different end-users.

The WOD system itself can be installed in an automatic way on hardware running a range of Linux based OS. System upgrades can also be done in semi-automatic fashion, i.e. upgrades and/or bug-fixes can be pushed to the end-user hardware without system downtime.

Importantly, the WOD system requires only rudimentary knowledge of the WRF modelling, and the Linux operating systems on behalf of the end-user, making it an ideal NWP tool in locations with limited IT infrastructure.