

Napster

Nonlinear Analysis and Prediction Statistics from Timeseries
and Ensemble-forecast Realisations



Napster: The Problem

Weather impacts on business operations

The timely completion of Wembley stadium depends on low wind speeds to be able to safely operate the cranes.



Photo by Gavin Weir



Photo by Cowlet on Flickr

The efficient scheduling of generation requires information on weather dependent demand.

Unloading oil platforms onto ships can only be carried out on suitably calm seas.



Photo by Nelgallen on Flickr

Napster: The Question

Can weather forecast information be used to improve operational efficiency?

Electricity scheduling: novel interpretations of weather forecast information can improve the efficiency of scheduling generation. CATS' methodology was shown to result in considerable savings for CAL-ISO.

MG Altalo & LA Smith (2004) Using ensemble weather forecasts to manage utilities risk Environmental Finance October 2004, 20: 8-9

Ship dispatching: useful probabilistic forecasts of wave heights can be produced to assist with the dispatching of ships for offshore operations.

MS Roulston, J Ellepola & LA Smith (2005) Predicting Wave Height Probabilities with Numerical Weather Prediction Models (PDF) J. of Coastal Engineering, XX, 1-23

Strong winds: we can't stop the wind from blowing but we can identify those periods where conditions that are operationally favourable.

MS Roulston, DT Kaplan, J Hardenberg & LA Smith (2003) Using medium-range weather forecasts to improve the value of wind energy production (PDF) Renewable Energy 28 (4) April 585-602

Napster: The Project

Napster is a two part technology transfer project that builds on the technology developed in the DIME faraday project

Part I: Business Outreach

- * in company seminar to provide “know-why” and discuss better decision making under uncertainty
- * maintenance of a project website
- * weather impact handbook

Part II: Weather Impact Forecasting Facility

- * business specific
- * web based decision support tool providing forecasts of key operational variables and their uncertainties

Knowledge Transfer

The project already has a number of individual partners on board and is looking for additional interested parties.

Register interest with the Smith Institute

<http://www.smithinst.ac.uk/Projects/PD/RA-NERC>

Supporting information and related papers

<http://www.lse.ac.uk/collections/cats/>