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Weatherwatch: Can the intensity of a hurricane be predicted?

David Hambling
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Devastation in New Orleans after Hurricane Katrina in 2005. A new modelling technique may be able to forecast the intensity of an approaching storm. Photograph: Mario Tama/Getty Images

It is possible to predict the track of a hurricane with a reasonable degree of accuracy several days in advance. Unfortunately predicting intensity is less certain, and potential victims don't know whether to expect a rather heavy thunderstorm or something truly apocalyptic. Evacuation may be a wise precautionary measure, but when the promised devastation does not occur it looks like crying wolf.

Researchers at the Southern Methodist University in Dallas, Texas are developing a new modelling technique to predict the speed of hurricane winds. Known as the Learning Prediction Intensity Interval model, it is based on data mining using an advanced machine learning process. The computer itself works out the pattern of intensity development from a large pool of raw data, unlike existing methods where humans cherry-pick the most relevant historical data for a regression model to fit the current situation.

Current predictions just give one figure for wind speed, with an error range of about 15mph per day ahead. The new method gives the range of wind speeds (say, 50 to 70 knots), that can be expected with 95% certainty, and the ranges expected with 90% and 68% probability. The researchers are already putting up live predictions for the 2011 hurricanes as they happen from their current model (ida.lyle.smu.edu/PIIH/). Next year they plan to have a fully operational version.