

NEWS

Random noise to improve weather forecasts

Small-scale fluctuations, which are wide-spread in the atmosphere, may affect weather systems more than previously thought, scientists at Oxford University have discovered.

The fluctuations, known as inertia-gravity waves are prominent in the bottom 15km of the atmosphere and show up as 'stripey' features in clouds. Their horizontal wavelengths can be as short as 5km. Weather prediction models, which divide the Earth into grid-boxes measuring around 50km by 50km, cannot pick them up.

Meteorologists have therefore had to assume that the waves do not significantly interact with weather systems, such as warm and cold fronts, but this assumption had never been rigorously tested.

However, using a computer model of a simple fluid system resembling the atmosphere, the scientists found that the waves could affect the atmosphere.

When the scientists sent random noise, to represent the inertia-gravity waves, through the system, it could behave differently.

The fluid could spontaneously change to quite different states, with a dramatic shift in the patterns of low and high pressure. This suggests that inertia-gravity waves could cause significant errors in weather forecasts.

Paul Williams, said, 'More research is needed to find out exactly how bad the forecast error might be, but the preliminary results are very exciting. It sounds bizarre to suggest that adding random noise to a forecast might help to improve it, but science is always full of surprises!'



Congratulations

John Lawton (right), our Chief Executive, received the prestigious 2004 Japan Prize in the category of the Science and Technology for Conservation of Biodiversity. The prize, from the Science and Technology Foundation of Japan, recognises his outstanding work of international value on ecological aspects of biodiversity.

Jesús Fernández Gálvez, from the Environmental Systems Science Centre, has been awarded the 2003 José Maria Albareda Prize of the Spanish Society of Soil Science for a study that used Earth observation techniques to understand soil water dynamics.



John Croxall (left) is the 24th recipient of the British Ornithologists' Union Godman-Salvin Gold Medal in recognition of his work with seabirds, particularly albatrosses, and his role in applying scientific research on birds in the fields of conservation and management.

Sea mammal survey

The Sea Mammal Research Unit is co-ordinating an international survey of harbour porpoises, bottlenose dolphins and common dolphins in the shelf waters of the Atlantic margin, the North Sea and adjacent waters. The research will develop ways to monitor populations and specific areas, and should help pick out population trends from previous major surveys.