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## Applied and Computational Mathematics Seminar

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**Colm Connaughton (Warwick Mathematics Institute and Centre  
for Complexity Science)**

will speak on

### **Instabilities of Rossby Waves and the Generation of Zonal Flows**

**Fri 6th February 2009 at 2:15PM**

**Location: Mathematical Sciences Teaching Room**

The Charney–Hasegawa–Mima equation is the most basic model of the large scale dynamics of the atmosphere or ocean. It admits wave solutions which we know as Rossby waves. In this talk I will discuss two basic instabilities of a Rossby wave, the decay instability and the modulational instability, and the relationship between them. The nonlinear saturation of the modulational instability provides a mechanism for the generation of zonal jets which are ubiquitous features of thin fluid layers subject to strong rotation.

This talk is part of the **Applied and Computational Mathematics** series. For more, see <https://maths.ucd.ie/seminars>