Low-frequency variability in climate models: a dynamical systems perspective

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Abstract

We discuss several climate models, all related to the atmospheric and oceanic circulation on the Northern Hemisphere. These models are finite dimensional versions, obtained by discretisation, Galerkin projections, etc. General aim is to describe climate variations, such as the Atlantic Multidecadal Oscillation. Understanding the mathematics and physics of these phenomena is important for the detection of climate changes due to greenhouse gasses. In a joint paper Broer-Simó-Vitolo, Nonlinearity 2002, such a model was studied in extenso. A new joint project in the direction has just started. This research also has led to new insights on attractors of 3D diffeomorphisms. In the talk we give an overview.