



Time series analysis of Rayleigh–Bénard convection

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Based on recent progress in statistical properties of dynamical systems, the author's low-order models of Rayleigh–Bénard convection in the form of coupled Volterra gyrostats (extensions of the Lorenz system) are analyzed as time series models for mesoscale dynamics. Spawned by the underlying dynamics, such models may prove more useful for atmospheric data analysis than traditional time series models, which involve strong statistical assumptions rarely met in real data.