



Abstract Details

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Title: The Global Analysis Theory of Climate System
Abstract:

The idea and main theoretical results of the global analysis theory of climate system are briefly summarized in this paper. A theorem on the global behavior of climate system is given; that is, there exists a global attractor for the dynamical equations of climate, any state of climate system will eventually evolve into the global attractor as time increases, indicating the nonlinear adjustment process of climate system to external forcing. The different effects of external forcing, dissipation and nonlinearity on the long-term behavior of solutions are pointed out, and some main applications of global analysis theory are also introduced. Especially, three applications of global analysis theory to the adjustment and evolution processes of climate, the principle of numerical model design and the optimally numerical integration, are discussed.

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