

NON-NORMALITY IN DYNAMICAL SYSTEMS: SENSITIVITY AND RESPONSE

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The dissipative and inhomogeneously forced nature of our climate makes the task of determining its response to external modulations hard to assess. This difficulty stems from the climate system being far from thermodynamic equilibrium which, in principle, prevents the equivalence between free fluctuations and its response. In this work we discuss the role of non-normality in determining the response and sensitivity of a dynamical systems out of equilibrium to applied forces. A linear response approach is taken to understand how the non-normality of evolution operators explain a delayed convergence of response and enhance the system's sensitivity to parameter changes.