

Abstract Submitted  
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**Response to disturbance**<sup>1</sup> WEN-XIU WANG, DAN SHEN, YU-MEI JIANG, YING-MEI WANG, DA-REN HE, Yangzhou University, China, PEI-PEI ZHANG, Jiangsu University, China, YUE HE, Wuxi No.1 Middle School, China — We suggest a new concept named response to disturbance for describing a character of dynamic systems. In relatively simple systems the evolution usually tends to a final state, which may be an equilibrium state, a periodic oscillating state, a quasi-periodic state, or a chaotic state. A disturbance, which always exists in practical systems, sometimes vanishes gradually and indicates the final state is stable, while it sometimes grows up very quickly and indicates the final state is unstable. However, in a relatively complex system disturbance may cause emergence of (may be a very large number of) new structures and very long evolution processes. So, we are trying to suggest a parameter with suitable function form so that the different responses to disturbance in different type of systems can be quantitatively distinguished. We hope that the parameter can be useful for understanding complexity of the practical systems. The details will be presented elsewhere.

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