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# A random and set-valued dynamical systems perspective on critical transitions

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## Abstract

Critical transitions describe the occurrence of sudden changes of behaviour in the dynamics of complex systems in nature, technology and society. We identify certain critical transitions with bifurcations in both random dynamical systems and set-valued dynamical systems and describe fundamental aspects of both approaches in detail. We also address the question of predicting critical transitions.

This talk is based on three papers, with co-authors J.S.W. Lamb, G. Malavolta (Imperial College London), Doan Thai Son (Vietnam Academy of Science and Technology), C. Kuehn (Vienna University of Technology) and C.S. Rodrigues (MPI Leipzig).

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