Avalanches in Functional Materials and Geophysics /

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Monografía

This book provides the state-of-the art of the present understanding of avalanche phenomena in both functional materials and geophysics. The main emphasis of the book is analyzing these apparently different problems within the common perspective of out-of-equilibrium phenomena displaying spatial and temporal complexity that occur in a broad range of scales. Many systems, when subjected to an external force, respond intermittently in the form of avalanches that often span over a wide range of sizes, energies and durations. This is often related to a class of critical behavior characterized by the absence of characteristic scales. Typical examples are magnetization processes, plastic deformation and failure occuring in functional materials. These phenomena share many similarities with seismicity arising from the earth crust failure due to stresses that originate from plate tectonics

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