





Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali / Thesis & Dissertation / Master of Science / MS-16

Please use this identifier to cite or link to this item: http://hdl.handle.net/123456789/3796

Title: Stochastic Sandpile Models in two Dimensions

Authors: Chhajed, Kartik.

Keywords: Stochastic

Sandpile Dimensions

Issue 28-Jul-2021

Date:

Publisher: IISERM

Abstract:

Self-organized criticality (SOC) is a property of dynamical systems that are self attracted towards criticality without tuning the external parameter. Sandpile models are toy models of building a pile of sand by adding sand grains. By putting different boundary conditions (open boundary or closed boundary) and tuning the drive (no drive, stochastic drive, constant drive), sandpiles exhibit interesting features like Self organized criticality, absorbing-phase transition, and proportionate growth. Earlier physicist showed that the 1D Manna Sandpiles belong to the universality class, same as (1+1) dimensional Directed Percolation (DP), and 1D Oslo Sandpiles belong to the quenched Edwards-Wilkinson universality class. The present numerical studies of a 2- dimensional open Manna and open Oslo sandpiles suggest that their critical behaviour are the same. Numerical studies on the 2-dimensional closed Manna sandpiles show critical behaviour different from DP.

URI: http://hdl.handle.net/123456789/3796

Appears in MS-16

Collections:

Files in This Item:

File	Description	Size	Format	
MS16001Thesis.pdf		10.92 MB	Adobe PDF	View/Open

Show full item record

di

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.



Customized & Implemented by - Jivesna Tech