Università degli Studi di Palermo

Dipartimento di Matematica e Informatica

Words and Automata Research Group

SEMINAR ANNOUNCEMENT

Title: A CAT Recursive Algorithm for the Exhaustive Generation of Sand Piles

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Friday 10th May 2013, 2:30 p.m.
Room 7
Via Archirafi 34, 90123 Palermo

Abstract:

The Sand Pile Model (SPM) and its generalization, the Ice Pile Model (IPM), take their origins from physics and have various applications in the description of the evolution of granular systems. The talk deals with the problem of the enumeration and exhaustive generation of the accessible configuration of the system.

The innovative idea is a decomposition theorem for SPM configurations, based on the notion of staircase bases. Based on this theorem, we provide a recursive formula for the enumeration of SPM(n) and a constant amortized time (CAT) algorithm for the generation of all SPM(n) configurations. The same approach is extended to the Ice Pile Model.

All interested people, in particular students, are invited to participate.