

Scientific Computing

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CBC talk: The global existence of large BV solutions and slow erosion limit for a model of granular matters - August 28, 2008

Thursday August 28, Wen Shen, Assistant Professor of Mathematics from Pennsylvania State University will hold a talk on: "The global existence of large BV solutions and slow erosion limit for a model of granular matters"

Total number of participants: 11

Total number of guests outside of CBC: 1

Number of different nationalities represented: 4

Total number of speakers: 1

Total number of talks: 1

Speaker

Dr. Wen Shen, Assistant Professor of Mathematics (Penn State University)

Abstract

In this talk I will study a 2×2 system of balance laws for granular matter (avalanche), proposed by Haderer and Kuttler.

The system is weakly linearly degenerate at a point. Assuming the height of the moving layer is sufficiently small, we show that the global existence of BV solutions, for a class of initial data with bounded but possibly large total variation. Furthermore, we study the "slow erosion limit". We show that, if the thickness of the moving layer remains small, then the profile of the standing layer depends only on the total mass of the avalanche flowing downhill, not on the time-law describing at which rate the material slides down. More precisely, in the limit as the thickness of the moving layer tends to zero, the slope of the mountain provides the unique entropy solution to a scalar integro-differential conservation law.

Participant list

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What	
When	Aug 28, 2008 from 01:00 PM to 02:00 PM
Where	The executive meeting room opposite Aslak's office
Contact Name	Aslak Tveito
Add event to calendar	 vCal  iCal