

Conservation Laws and Applications

celebrating the 70th birthday of Dan Marchesin

IMPA, Rio de Janeiro, August 1 – 4, 2017

Room 224

Hour	Tuesday, 1
08:30 - 09:00	Check-in (office 208)
09:00 - 09:10	Opening
	Chair: Alexei Mailybaev
09:10 - 09:40	<i>Recalling the Riemann problem for the polymer injection model in a three-phase flow in a porous medium</i> Aparecido J. de Souza (UFPB)
09:40 - 10:10	<i>Scaling behavior of stochastic, multiphase flow in porous media</i> Frederico Furtado (University of Wyoming)
10:10-10:40	<i>The effect of salinity on immiscible displacement recovery</i> Hans Bruining (TU Delft)
10:40 - 11:10	Coffee break
	Chair: Amaury Alvarez
11:10-11:35	<i>Do General Relativistic Shock Wave Interactions Create Regularity Singularities in Spacetime?</i> Moritz Reintjes (Instituto Superior Técnico, Lisboa)
11:35-12:00	<i>On geometric issues for systems of Conservation Laws</i> Pablo Castaneda (Instituto Tecnológico Autónomo de México)

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Hour	Wednesday, 2
	<i>Chair: Grigori Chapiro</i>
09:10 - 09:30	<i>Non local solutions in conservation laws</i> Vitor Matos (Universidade do Porto, Portugal)
9:30-9:50	<i>Mathematical theory of geochemical injection problems for multicomponent two phase flow in porous media</i> Wanderson J. Lambert (Universidade Federal de Alfenas)
9:50-10:10	<i>Computing numerical solutions of the modified Buckley-Leverett equation with a dynamic nonequilibrium capillary pressure model</i> Eduardo Abreu (University of Campinas, Brazil)
10:10-10:30	<i>Resonant rarefaction and shock waves for a system of conservation laws</i> Amaury C. Alvarez (IMPA)
10:30 - 11:00	Coffee break
	<i>Chair: Vitor Matos</i>
11:00-11:30	<i>Towards automatic solvers of Riemann problems</i> Dan Marchesin (IMPA)
11:30-12:00	<i>Phase-field dynamic fracture model and discretization</i> Marcus Sarkis (Worcester Polytechnic Institute)
17:30	<i>Cocktail (Researchers room 329 at the 3rd floor, IMPA)</i>

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Hour	Thursday, 3
	<i>Chair: Eduardo Abreu</i>
09:10 - 09:30	<i>Semi-continuous thermodynamics theory for a multiphase and multicomponent reservoir simulation framework</i> Fabio P. Santos (Federal University of Rio de Janeiro)
9:30-9:50	<i>Mathematical modeling of one-dimensional oil displacement by combined solvent-thermal flooding</i> Adolfo Pires (Universidade Estadual do Norte Fluminense)
9:50-10:10	<i>Traveling wave solutions describing combustion waves in porous media</i> Grigori Chapiro (Universidade Federal de Juiz de Fora)
10:10-10:30	<i>Non-local 1D conservation laws: when the shock wave is unstable</i> Alexei A. Mailybaev (IMPA)
10:30 - 11:00	Coffee break
	<i>Chair: Frederico Furtado</i>
11:00-11:30	<i>A Stable Manifold Theorem for a class of degenerate evolution equations and decay of kinetic shock layers</i> Kevin Zumbrun (Indiana University)
11:30-12:00	<i>Anomalous dissipation and spontaneous stochasticity in Burgers Equation</i> Theodore D. Drivas (Princeton University)

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Hour	Friday, 4
	<i>Chair: Pablo Castaneda</i>
09:10 - 09:30	<i>Numerical Analysis of Traveling Waves in Flow of Porous Media</i> Ismael de Souza Ledoino (LNCC)
9:30-9:50	<i>Cauchy problem for a model of combustion in a porous medium with several parallel layers</i> Jesus Carlos da Mota (Universidade Federal de Goiás)
9:50-10:10	<i>The effects of capillarity diffusion on non strictly hyperbolic systems of conservation laws</i> Luis Fernando Lozano G.
10:10 - 10:40	Coffee break
	<i>Chair: Moritz Reintjes</i>
10:40-11:10	<i>Riemann problems with delta-shock waves</i> Marcelo Santos (University of Campinas, Brazil)
11:10-11:40	<i>Wave manifold: topology meets PDE</i> Cezar Eschenazi (Universidade Federal de Minas Gerais)
11:40	<i>Closing</i>