

Colloquium Talk

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Global solutions to the Burgers-Hilbert equation

Wednesday, February 14, 2018

at 14:00 h

ESI, Boltzmann Lecture Hall

Abstract: In 2009 J. Biello and J. Hunter derived a balance law modeling nonlinear waves with constant frequency, obtained from Burgers' equation by adding the Hilbert transform as a source term. Recent work has established the global existence of solutions in the space $L^2(\mathbb{R})$, and a partial result on uniqueness. This talk will also describe the construction of piecewise smooth solutions, locally in time, providing a detailed analysis of the solution profile in a neighborhood of each shock. Various related open problems will be discussed. (These are joint results with Khai Nguyen and Tianyou Zhang).

A. Constantin

February 8, 2018