INVERSE PROBLEMS FOR HYPERBOLIC CONSERVATION LAWS

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Hyperbolic conservation laws are central in the theory of nonlinear PDEs. One of their typical features is the development of shock waves. This poses many challenges to the mathematical theory of both forward and inverse problems. It is well-known that in general two different initial data may evolve into the same solution. In this talk, we will present a number of ways to overcome this difficulty, with emphasis on the Bayesian approach using particle trajectory data, and survey some recent results.