

Recent results on quantitative compactness estimates for hyperbolic conservation laws and Hamilton-Jacobi equations

Tien Khai Nguyen

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North Carolina State University, USA

E-mail: khai@math.ncsu.edu

Abstract

This talk will be devoted to a fundamental question on the compactness of sets of solutions. The key concept in this study is the Kolmogorov epsilon-entropy which is the logarithm of the minimum number of elements in an epsilon-covering of a given (totally bounded) set. I will use this concept to provide a sharp estimate on minimum number of bits needed to represent an entropy solution of general system of hyperbolic conservation laws and a viscosity solution of Hamilton-Jacobi equations with accuracy epsilon with respect to a suitable metric distance.