



FMSP Lectures

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Existence of an entropy solution in the sense of
Young measures for a first order conservation
law with a stochastic source term

October 20 (Tue) 16:50 ~ 18:20 Room 128

Abstract:

We consider a finite volume scheme for a first order conservation law with a monotone flux function and a multiplicative source term involving a Q -Wiener process. We define a stochastic entropy solution in the sense of Young measures. We present some a priori estimates for the discrete solution including a weak BV estimate. After performing a time interpolation, we prove two entropy inequalities and show that the discrete solution converges along a subsequence to an entropy solution in the sense of Young measures.

This is joint work with T. Funaki, Y. Gao and H. Weber.