DIFTA

27 August 2003
Room 1236, 13:15–14:00

Wen Shen, SISSA

Small BV Solutions of Hyperbolic Non-cooperative Differential Games

Abstract: This is a joint work with Alberto Bressan. The talk will begin with a brief introduction to non-cooperative differential game, which is closely related to optimal control problems. I will formally derive the Hamilton Jacobian equations and the corresponding system of conservation laws. The hyperbolicity of the system is essential, and neccesary conditions are derived. In the positive case, the weak solution of the system of conservation laws determines an n-tuple of feedback strategies. These yield Nash equilibrium solutions to the non-cooperative differential game.

Some discussion about extensions and future work will be given at the end of the talk, where we will also discuss partially cooperative strategies which always yield a hyperbolic system.

27 August 2003
Room 1236, 14:15–16:00

Alberto Bressan, SISSA

On the rate of convergence of vanishing viscosity approximations

Abstract: Consider a strictly hyperbolic system of conservation laws $u_t + f(u)_x = 0$, assuming that each characteristic field is genuinely nonlinear. The talk will discuss how to estimate the L^1 difference between an exact solution and a viscous approximation: $u^\epsilon_t + f(u^\epsilon)_x = \epsilon u^\epsilon_{xx}$ as $\epsilon \to 0$. The analysis relies on a comparison relation between positive measures, sharp decay estimates for positive waves and new interaction functionals estimating the growth of shocks.