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"'A uniqueness condition for hyperbolic systems of conservation laws.'

ABSTRACT:

Consider the Cauchy problem for a hyperbolic $n \times n$ system of conservation laws in one space dimension:

$$u_t + f(u)_x = 0, \qquad u(0,x) = \bar{u}(x).$$

In my seminar, I want to relate various uniqueness results for this problem. In particular, relying on the existence of a continuous semigroup of solutions, we will see that the entropy admissible solution is unique within the class of functions $u = u(t,x)$ which have bounded variation along a suitable family of space-like curves [Bressan and Lewicka 2000].