Non-Lipschitz regularity for SG hyperbolic systems

Marco Cappiello - *University of Ferrara*

Joint work with Alessia Ascanelli (University of Ferrara)

We study the Cauchy problem for nonlinear hyperbolic systems with coefficients globally defined in the space variables $x \in \mathbf{R}^n$ and admitting a polynomial growth for $|x| \to +\infty$. For this kind of problem it is natural to investigate well posedness in suitable weighted Sobolev spaces giving precise information both on the regularity of the solution and on its behaviour for $|x| \to \infty$. We assume moreover that the coefficients of the system have a low regularity with respect to the time variable t (non-Lipschitz regularity). It is well known that this assumption leads in general to a loss of regularity of the solution with respect to x. Here we give more precise results showing that the low regularity in t has also an effect on the behaviour at infinity of the solution.