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The Cauchy problem for higher order p-evolution equations

Abstract

We consider evolution equations with degree of evolution $p \geq 2$ and order $m \geq 2$; coefficients of the equations are complex valued and depend both on time and space variables; we assume the equations to have real characteristics. We obtain well posedness in H^∞ of the Cauchy problem by giving decay conditions on the coefficients as the space variable $|x| \to \infty$.

Dealing with $p \geq 2$-evolution equations with complex coefficients, the necessity of giving some decay conditions at infinity to get a well posed Cauchy problem in H^∞ arises from [5]. Here we give sufficient conditions for well posedness following the technique of [6, 4].

The results presented in this talk can be found in the recent papers [1, 2, 3].

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