

第 6 3 回 広島数理解析セミナー (2 0 0 3 年度)

Hiroshima Mathematical Analysis Seminar No.63

日時 : 7月18日(金) 16:30 ~ 17:30

場所 : 広島大学理学部 B707

講師 : 林 仲夫 氏 (大阪大学)

題目 : Large time behavior of solutions to damped wave equations in the sub-critical case

要旨 : Damped wave equation with the super-critical nonlinearity has been studied by many authors. If the power of the nonlinearity p is strictly greater than $1 + \frac{2}{n}$ then we call the equation the super-critical case, if $p = 1 + \frac{2}{n}$ we call it the critical case and if $p < 1 + \frac{2}{n}$ we call it the sub-critical case, where n is the space dimension. It was shown that solutions behave like those of linear heat equation for the large time in the super-critical case. In this talk I give a survey of a recent joint work with Kaikina and Naumkin. Damped wave equation with the critical or sub-critical nonlinearity in one space dimension is studied and the sharp asymptotics in time of small solutions to the problem is presented. More precisely, solutions of the problem have additional time decay in the critical case and tend to the self-similar solutions of the corresponding nonlinear heat equation in the subcritical case under the smallness condition and sign condition on the data.

広島数理解析セミナー幹事

池畠 良 (広大教育) ikehatar@hiroshima-u.ac.jp

宇佐美広介 (広大総科) usami@mis.hiroshima-u.ac.jp

大西 勇 (広大理) isamu_o@math.sci.hiroshima-u.ac.jp

★川下 美潮 (広大理) kawasita@math.sci.hiroshima-u.ac.jp

倉 猛 (広大理) kura@math.sci.hiroshima-u.ac.jp

柴田徹太郎 (広大総科) shibata@mis.hiroshima-u.ac.jp

滝本 和広 (広大理) takimoto@math.sci.hiroshima-u.ac.jp

松本 敏隆 (広大理) mats@math.sci.hiroshima-u.ac.jp

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