北京理工大學

数学与统计学院学术报告

Non-relativistic limit for the cubic nonlinear Klein-Gordon equations

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摘要： In this talk, focuses on the non-relativistic limit of the Cauchy problem for the defocusing cubic nonlinear Klein-Gordon equations. We show that, as the light speed c tends to infinity, the error function is bounded by, (1) in the case of 2D and modulated Schrodinger-wave profiles, c^{-2}, uniformly for all time, under H^2 initial data; (2) in the case of both 2D and 3D and modulated Schr\ “odinger profiles, c^{-2} (1+t), under H^4 initial data. We also show the sharpness of the upper bounds in (1) and (2), and the required minimal regularity on the initial data in (2). This talk is based on a joint work with Zhen Lei.

个人简介： 吴奕飞，天津数学中心教授，入选国家创新领军人才(2023)、青年拔尖人才(2019). 从事偏微分方程理论及数值分析、调和分析等方向的交叉研究. 科研成果解决了菲尔兹奖获得者T.Tao等提出并遗留了十多年的问题；设计了目前为止非线性薛定谔方程和KdV方程正则性要求最低的快速格式，科研论文发表在JEMS、CMP、Adv.Math.、Anal.PDE、Numer.Math 、 Math.Comp.、Numer.Math.等国际刊物上.

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