Local Smoothing Estimate for the Fourier Integral Operators Satisfying Cinematic Conditions

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Time: 3:00 pm - 4:00 pm, Thursday, December 12, 2019
Venue: Room 264, Geography Building, Zhongbei Campus, ECNU
(华东师范大学中山北路校区，地理楼264室)

Abstract

Local smoothing conjecture which was formulated by Sogge has close relationship with other significant conjectures in Harmonic analysis (such as Bocher-Riesz conjecture, restriction conjecture and Kakeya conjecture), and finds its extensive applications in PDEs. In this talk, we will present the recent improvement of local smoothing estimate of a certain class of Fourier integral operators satisfying cinematic curvature conditions. The main ingredients in our proof are bilinear oscillatory integral estimate, multilinear oscillatory integral estimate and variable coefficient decoupling inequality. This talk is based on the joint works with Chuanwei Gao and Jianwei Yang.

Biography

Professor Changxing Miao currently works at the Institute of Applied Physics and Computational Mathematics, a recipient of the National Science Fund for Distinguished Young Scholars. He is well-known by his works on harmonic analysis, geometrical measure theory and the scattering theory, the mathematical theory for flow dynamics, including the works on the compressible Navier-Stokes equations with the highly oscillating initial velocity, the regularity criterion of weak solution for the 3D viscous magneto-hydrodynamics equations, the Bernstein's inequality and the 2D dissipative quasi-geostrophic equation. He leads a very active research group on a project of 'PDEs, Harmonic Analysis and its application'.