



复旦大学数学科学学院

数学综合报告会

报告题目: Coarse graining, dynamic renormalization and the kinetic theory of shock clustering

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报告时间: 2016-05-24 星期二 13:30-14:30

报告地点: 光华西辅楼 501

摘要: In this talk, I will discuss simulations of the benchmark problem arising from shock clustering. The computation of coarsely self-similar flow turbulence can be modeled by Smoluchowski's dynamics with additive kernel $K(x, y) = x + y$. Long time numerical integration approach fails for getting the self-similar solutions due to the accumulated errors.

In contrast, dynamic renormalization and fixed point algorithms are applied to the results of shortly evolved dynamics, and successfully overcome these difficulties.

These methods not only capture the asymptotic behavior of the exact self-similar solutions, but also approximate the first moments with errors in satisfaction.

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