

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**Non-equilibrium Green function
(NEGF) in Quantum Transport (I)**

邀请人: 郑伟英 研究员

报告时间: 2021 年 6 月 23 日 (周三)

下午 15:00-16:00

报告地点: 数学院南楼

202 教室

Abstract:

Non-equilibrium Green function method is popularly used in the quantum transport simulation. It was proposed in 1960's based on the methods of many-body perturbation theory (MBPT). NEGF method is hard to understand for ones who lack the MBPT background. In this talk I will explain NEGF method by one-electron approach to circumvent the MBPT. We elaborate the basic definition of the Green functions in Quantum mechanics and the relations of all kinds of Green functions, especially the relation of the static Green function with the propagator for transient problems. Self-energy is vital term for Green function method to include the scattering effects. We explained how to derive the self-energy term through the generalized Fourier transform and the ideas of extending the Green function at equilibrium state to non-equilibrium state.

欢迎大家参加！