



SCMS Colloquium

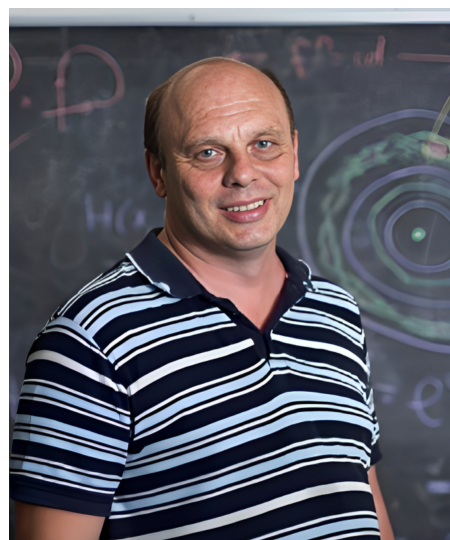
Universality conjecture for Hamiltonian dynamics

Dmitry Turaev

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Time: Dec 10th, 16:00 - 17:00

Venue: Gu Lecture Hall, SCMS



Abstract: A foundational fact of classical physics is that the time evolution of any isolated physical system is described by Hamiltonian differential equations (implying that the local dynamics of such system are represented by orbits of symplectomorphisms of a ball). We show that the choice of the Hamiltonian function is irrelevant here, because a typical Hamiltonian is universal: its local dynamics approximates, in high regularity, all symplectic dynamics possible for the given number of degrees of freedom. The universality conjecture suggests an explicit description of universal Hamiltonians.

About the speaker: Dmitry Turaev, 现任伦敦帝国理工学院数学系教授。Turaev 的研究涵盖动力系统的多个分支, 兼顾纯数学与应用方向; 他也在光学与暗物质研究方面作出贡献。他发表了 100 余篇学术论文, 并在多个重要会议上作大会报告, 其中包括在 2010 年 ICM 动力系统分会的 45 分钟报告。

