

東北大学大学院情報科学研究科
純粋・応用数学研究センター

情報数理談話会のお知らせ

日 時： 2014年2月17日(月) 16:00 — 17:00

(15:40より会場にお茶を用意しております)

場 所： 東北大学大学院情報科学研究科棟2階大講義室

講演者： Marcel Schmidt 氏 (Friedrich-Schiller-Universität Jena,
Germany)

題 目： Does diffusion determine the geometry ?

[概要] A famous question of M. Kac asks: Can one hear the shape of a drum ? In mathematical terms he asked whether the spectrum of the Laplacian uniquely determines the geometry of the underlying domain or, put differently, whether two unitary equivalent Laplacians live on the same geometric object. It is now known, that the answer to this question is no, in general. Following an idea of Wolfgang Arendt, we replace the unitary transformation intertwining the Laplacians by an order preserving one and then ask the same question. As in this situation the associated semigroups are equivalent up to an order isomorphism our question becomes as stated in the title. In this talk we will give an overview over the recent results concerning this problem. In particular, we will discuss which quantities are determined by diffusion and give some possible applications. (this is joint work with Matthias Keller, Daniel Lenz and Melchior Wirth)

ホームページ : <http://www.math.is.tohoku.ac.jp/research/colloquium.html>