

Paving over arbitrary MASAs in von Neumann algebras

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15:00 - 17:00

127 Conference Room
Faculty of Science Bldg. #3
Kyoto University

Motivated by an intriguing claim in Dirac's 1947 book on "Quantum Mechanics", Kadison and Singer have asked the question of whether any pure state on the diagonal maximal abelian subalgebra (MASA) D of $B(H)$ extends to a unique state on $B(H)$. They also showed that this unique pure state extension property is equivalent to norm paving over D for operators in $B(H)$. The Kadison-Singer paving problem has been recently solved in the affirmative by Marcus, Spielman, and Srivastava.

In these lectures, we will introduce a general paving property for a MASA A in a von Neumann factor M , called so-paving, involving approximation in the so-topology, rather than in norm, but which coincides with norm-paving in the case $D \subset B(H)$. We conjecture that so-paving holds true for any MASA in any factor. We check the conjecture in many cases, including singular and regular MASAs in hyperfine factors. Related problems will be discussed.



本講義は「スーパーグローバルコース数学特別講義 1」として、大学院の学生には1単位認定されます。



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