Einladung
zum Mathematischen Kolloquium
mit Vor-Kolloquium

16:00-16:45 Uhr Vor-Kolloquium im N14 für Studierende und Promovierende, moderiert von **Dr. Rodrigo Avalos,**

Vortragender Prof. Dr. Siegfried Echterhoff

The Banach-Tarski paradox and amenable groups

The Banach-Tarski paradox states that the unit ball in three dimensional space can be partitioned into finitely many pieces in such way that we can resemble two full balls from these pieces. Hence we may double the unit ball. That this is possible is due to axiom of choice and the fact that the free group in two generators is not amenable. On the other hand, amenability of the circle group implies that similar partitions do not exist for the unit disc in the plane! We shall explain these facts.

Es spricht am

Freitag, den 24.11.2023, um 17:15 Uhr

Prof. Dr. Siegfried Echterhoff

(Universität Münster)

über das Thema

Amenable group actions on spaces and operator algebras

Motivated by the study of paradoxical decompositions (as in the Banach-Tarski paradoxon), the notion of an amenable group has been introduced by von Neumann in the 1920's. In the 1980's Zimmer introduced the concept of amenable group actions on measure spaces in order to study rigidity properties of lattices in Lie groups. In the meantime, various notions of amenability were introduced for actions on topological spaces and on operator algebras, where the latter can be viewed as non-commutative analogues of measure or topological spaces. They have important applications in the interplay between group theory and operator algebras. After a gentle introduction to various notions of amenable actions we want to give an overview over some exciting recent results.

Der Vortrag findet im Hörsaal N14 (M1) des Mathematischen Instituts (Gebäude C, Auf der Morgenstelle 10) statt. Zuvor wird zum Tee im Hermann-Hankel-Raum (6. Stock, ab 16:45 Uhr) eingeladen.