СЕКЦИЯ

„АЛГЕБРА И ЛОГИКА"

Драги колеги,

На 21 февруари 2025 г. (петък) от 13:00 часа в зала 578 на ИМИ-БАН ще се проведе присъствено заседание на семинара по Алгебра и логика.
Доклад на тема

Classification of C*-algebras through the lens of Cartan subalgebras

ще изнесе

Ali Raad (American University in Bulgaria).

Поканват се всички желаещи да присъстват.

От секция „Алгебра и логика" на ИМИ – БАН

http://www.math.bas.bg/algebra/seminarAiL/

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Abstract:

C*-algebras were introduced in the last century following various attempts to mathematically formalize the foundations of quantum mechanics. As such they encapsulate the study of noncommutative topology, as every C*-algebra is an algebra of bounded operators on some Hilbert space. Over the years there has been a significant attempt to classify C*-algebras by an invariant consisting of K-theoretic and tracial data. A recent breakthrough result has shown that every classifiable C*-algebra has a distinguished Abelian subalgebra called a Cartan subalgebra. Cartan subalgebras are pivotal in realizing C*-algebras as being built from topological groupoids. This yields concrete tools with which one can study a C*-algebra. A natural open problem is to find the defining characteristics of the groupoids giving rise to

classifiable C*-algebras. In this talk I will discuss this problem and highlight some recent results. I aim to give a gentle overview of the theory of C*-algebras, their classification, Cartan subalgebras and their corresponding groupoids. Then I will highlight some recent progress in this open problem. Some of the results I will mention constitute joint work between myself and Xin Li, as well as myself with Ward Bruyndonckx and Jonathan Taylor.