

Department of Mathematics, BGU

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# Operator Algebras and Operator Theory

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**On** *Monday, December 12, 2022*

**At** *16:00 – 17:00*

**In** *101- (basement)*

Adam Dor-On (University of Haifa)

will talk about

## **Co-universality for Toeplitz algebras of random walks on relatively hyperbolic groups**

*Abstract: When studying quotients of  $C$ -algebras generated by creation and annihilation operators on analogues of Fock space, the question of the existence of a co-universal quotient plays an important role in answering fundamental questions in the theory. The study of co-universal quotients goes back to works of Cuntz, and Cuntz and Krieger, on uniqueness theorems for  $C$ -algebras arising from symbolic dynamics, and by now co-universal quotients have been shown to exist in several broad classes of examples of Toeplitz  $C^*$ -algebras.*

*When associating Toeplitz  $C$ -algebras to random walks on a group  $G$ , new notions of  $*$ ratio-limit space and boundary emerge from searching for their co-universal quotients, and the existence of these co-universal quotients becomes intimately related to the group dynamics on the ratio-limit boundary.*

In this talk I will explain how we extended results of Woess to show that there is co-universal quotient for a large class of symmetric random walks on relatively hyperbolic groups. This sheds light on some questions of Woess on ratio-limits for random walks on relatively hyperbolic groups, and extends a result mine on the existence of co-universal quotients for Toeplitz  $C^*$ -algebras for random walks.

\*This talk is based on joint work with Ilya Gekhtman.