

Department of Mathematics, BGU

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# Operator Algebras and Operator Theory

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*On Wednesday, February 28 2024*

*At 16:00 – 17:00*

*In 201*

Jurij Volcic (Drexel University)

will talk about

## **Self-testing: from quantum information theory to operator algebras**

Abstract: Self-testing is the strongest form of quantum functionality verification, which allows one to deduce the quantum state and measurements of an entangled system from its classically observed statistics. From a mathematical perspective (which will be the perspective of this talk), self-testing is an intriguing uniqueness phenomenon, pertaining to functional analysis, moment problems, convexity and representation theory. This talk addresses basic motivation and ideas behind self-testing, and discusses which states and measurements can be self-tested. In particular, the talk focuses on how tuples of projections adding to a scalar multiple of identity, and Jordan algebras find its way into this corner of quantum information theory. Based on joint work with Ranyiliu Chen and Laura Mančinska.

**Please Note the Unusual Day and Time!**