



# Analysis Seminar

## Contextuality and Intrinsic Entanglement of Qutrit

By

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**Abstract:** According to the Gleason theorem if we assume that quantum states are described by the projective Hilbert space, then there exists exactly one way to introduce probabilities in this description, namely the usual way through a density matrix. Gleason theorem implies a corollary, so-called the Kochen – Specker theorem, according to which it is impossible to assign all rays of an  $N > 2$  dimensional Hilbert space a truth value (true or false), in such a way that exactly one vector in each orthonormal basis is true. Qutrit i.e.,  $N = 3$  system, is the simplest example where contextuality is demonstrated by the violation of the Klyachko – Can – Binicioğlu – Shumovsky (KCBS) inequality. In this talk, after a brief explanation of the KCBS inequality and a definition of intrinsic entanglement, a possible connection between the two properties will be presented.

**Date:** 31 March, 2021

**Time:** 13:30-14:30, GMT+3.

**Place:** ZOOM

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