From quantum harmonic analysis to quantum time-frequency analysis

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June 2025

Abstract

In this talk I indicate the interesting interplay between applied harmonic analysis, quantum mechanics and operator theory, which is known as quantum harmonic analysis and its extension: Quantum time-frequency analysis and explain some of the key notions, e.g. operator convolutions, the operator STFT, the polarized Cohen's class and operator modulation spaces.

Recently Dammeier and Werner have extended qha to the setting of quantum-classical hybrid systems and we will discuss the relation between this work and quantum Euclidean spaces.