

Workshop on Mathematical Physics and Pseudo-Differential Operators –
Celebrating Jean Nourrigat's 80th birthday

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The Kubo-Martin-Schwinger condition for Hamiltonian systems : Bose-Hubbard model

Thursday, November 6, 2025 2:10 PM (45 minutes)

This talk explores the connection between quantum and classical equilibrium states through the Kubo–Martin–Schwinger (KMS) condition in the Bose–Hubbard model. On finite graphs, we study the semiclassical high-temperature limit, showing that quantum Gibbs (KMS) states converge to the Gibbs measures of the discrete nonlinear Schrödinger equation (DNLS). The result establishes that Wigner measures of quantum KMS states satisfy the classical KMS condition, linking quantum statistical mechanics to classical Hamiltonian dynamics.

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