

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

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## **Renormalization of the spin-boson model**

*Thursday, November 6, 2025 11:10 AM (45 minutes)*

In this talk I will present new results concerning the well-posedness of the spin-boson dynamics for arbitrarily singular form factors. The Hamiltonian operator is obtained through a self-energy and wave function renormalization procedure, and it lies on a non-Fock representation of the canonical commutation relations. This renormalization is non-trivial, thus overcoming the problem of triviality in Fock representation renormalization schemes.

Based on a joint work with B. Hinrichs and J. Valentín Martín

**Presenter:** FALCONI, Marco (Université de Milan)