

Seminar

Quantum reservoir computing in Jaynes-Cummings model

Sreetama Das

IFISC (CSIC-UIB), Spain

Quantum reservoir computing (QRC) is a supervised machine learning algorithm that harnesses the input-driven dynamics of a complex quantum system (viz. 'reservoir') to solve temporal tasks. Compared to conventional neural networks, reservoir computing provides much simpler and faster training. In this talk, following a brief outline of QRC, I will present some intriguing aspects of QRC using a hybrid qubit-boson system governed by the Jaynes–Cummings Hamiltonian and its dispersive limit. This includes an analysis of their memory capacity across parameter regimes, and their performance in predicting chaotic time-series data.

Wednesday, Nov 12th 2025

16:00 Hrs (Tea / Coffee 15:45 Hrs)

Seminar Hall, TIFRH