



UNIMORE
UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA

Dipartimento di Scienze Fisiche,
Informatiche e Matematiche

Lunedì 7 aprile 2025 · ore 15:00-16:00

Dipartimento FIM · Via Campi 213/b, Modena – 41125 · **Aula M2.4**

Prof. Rita Fioresi
Università di Bologna

Title: Quantum Geometry meets Machine Learning and Quantum Computing

Abstract

The recent advances in quantum geometry provide language and tools particularly useful in Machine Learning and Quantum Computing. In this talk I will explain how the differential calculus on graphs via noncommutative geometry techniques can be fruitful for mathematical modeling of the mechanism of message passing in graph neural networks. Then I will introduce another key object in quantum group theory: the Drinfeld double and show how representations of the Drinfeld double are key for topological quantum computing and the Kitaev approach to fault tolerant quantum code.