



Dipartimento di Scienze
Molecolari e Nanosistemi

Università
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The Department of Molecular Sciences and Nanosystems organizes the seminar

From Quantum Mechanics to Nonlinear Effective equations: a quick survey with a look to the frontier

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20th October 2021

at 14.00 in Conference Room *Orio Zanetto*

and in videoconference at <https://zoom.us/j/83978158177> Passcode: seminar1

Abstract

Born as one of the deepest revolutions in the history of science, nowadays Quantum Mechanics has a well established role in the realm of the so-called "Normal Science". Many conceptual and philosophical conundrums remain still open, nonetheless the robustness of the theory is enforced by unprecedented experimental successes. Moreover, Quantum Mechanics has provided inspiration for new mathematical achievements, in Functional Analysis as well as in Algebraic Geometry.

We review the basics of the theory, the role of the linearity and the introduction of the nonlinearity, and introduce a problem investigated in

the last years: the existence of Ground States for the Nonlinear Schroedinger Equation on branched structures, namely metric graphs and hybrids. This research line was developed in collaboration with Filippo Boni, Raffaele Carlone, Michele Correggi, Simone Dovetta, Alice Ruighi, Enrico Serra, Lorenzo Tentarelli, and Paolo Tilli.



Riccardo Adami is Full Professor at Politecnico di Torino in Mathematical Analysis. Graduated from Università di Pisa, Ph.D. at Università "La Sapienza" in Rome, Postdoc at Ecole Normale Supérieure in Paris.

The organizers
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