



The Galileo Galilei Institute for Theoretical Physics Arcetri, Florence



Entanglement in Quantum Systems

May 21, 2018 - July 13, 2018

Understanding the nature of entanglement in quantum systems has been an important challenge in theoretical physics since the early days of quantum mechanics. However, it is only during the last decade that entanglement became a powerful tool to characterize extended quantum systems. Various aspects of quantum entanglement have been studied by employing the most advanced methods available in Quantum Field Theory, Quantum Gravity, Condensed Matter and Quantum Information. Despite the great achievements, many important theoretical questions are still unanswered and it is nowadays evident that an interdisciplinary effort is necessary to find satisfactory solutions.

The aim of this workshop is bringing together a broad spectrum of theorists who have a strong expertise in the areas of Quantum Field Theory, Quantum Gravity, Condensed Matter Theory and Quantum Information, including also some experimentalists, in order to exchange knowledge and discuss open problems related to entanglement from different perspectives.

Topics:

- Entanglement measures in Quantum Field Theories
- Entanglement in many-body systems
- Entanglement in Quantum Gravity: gravitational constraints & emergence of spacetime
- Tensor networks & entanglement
- Experimental detection of entanglement

Organizing Committee:

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