



November 14th, 2025

Archaeological Site of Pompeii, Italy

POMPEII
PARCO
ARCHEOLOGICO
DI POMPEI



Quantum Nexus – Pompeii 2025

A symbolic encounter of quantum science and human legacy

Timeless Entanglement: Time, Memory and Quantum Reality. A Dialogue between Science and History.

Second-generation quantum technologies represent a revolution that goes beyond science, touching philosophy, art and our very perception of time and reality. Pompeii, with its history suspended in time, is a perfect symbolic place to host one of the closing event of the International Year of Quantum Technologies, representing a bridge between the past and the future. Closing this year 2025 of celebration of quantum technologies also in the excavations of Pompeii, a place full of history and a symbol of Roman culture, means recognizing that every scientific progress is also an act of dialogue with the past, a continuum in which knowledge is renewed and expanded, projecting itself into the future without losing the connection with its deepest roots. In this event organized by the Eudora Association (formerly the Macroscopic Quantum Coherence and Computing Association MQC2) we will talk about the theoretical bases and experiments that have led to macroscopic quantum physics today and the new technologies that constitute the heart of the second quantum revolution, such as the quantum computer, applications on photonic platforms and the quantum gravimeter, which sees Italy as a place of great tradition recognized at an international level, but also of the philosophical link that quantum physics has with classical culture.

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Program

10.00-10.20 ***Timeleess Entanglement - Welcome Address***

Berardo Ruggiero Associazione Eudora and ISASI CNR

Tommaso Calarco Università degli Studi di Bologna

10.20 ***Classical Time and Quantum Time***

Chairman: **Paolo Silvestrini** Associazione Eudora and Università della Campania "L. Vanvitelli"

10.25-10.40 **Gabriel Zuchtriegel** Director of Archaeological Site of Pompeii

The Relativity of Pompeii

10.40-10.55 **Giuseppe Sansone** University of Freiburg.

Entanglement on the Attosecond Timescale

10.55 ***Applications of the Second Quantum Revolution***

Chairman: **Stefano Fabris** CNR DSFTM

10.55-11.10 **Francesco Cataliotti** Università degli Studi di Firenze and INO CNR

Interfacing with atomic quanta

11.10-11.25 **Francesco Tafuri** Università di Napoli Federico II

Quantum Computer at Università di Napoli Federico II

11.25-11.40 **Stefano Branca** Istituto Nazionale Geofisica e Vulcanologia INGV

Quantum Instrumentation for volcanological monitoring



11.40-12.00 **Coffee Break**

12.00-12.45 ***Foundations, Perspectives and Strategies of Second Quantum Revolution***

Chairman: Tommaso Calarco Università degli Studi di Bologna

Carla Giusti Associazione Eudora

Communication of quantum science: looking for effective strategies

Elisabetta Paladino Università degli Studi di Catania and Women 4 Quantum

Women in Quantum: present and future

Ludovica Ciarravano QTI Quantum Telecommunications Italy

Quantum Communication: Quantum Key Distribution

Davide Corbelleto Banca Intesa Sanpaolo

Why Quantum Computing is relevant for finance?

Alessandro Bruno QuantWare

Quantum Computing: companies and territory

Tommaso Calarco Università degli Studi di Bologna

National and International Strategies in Quantum Technologies

Free discussion in Round Table mode

12.45-13.00 **Julie Pelletier**

Quantum Music Suggestions

13:00 ***From the dawn of time to the experiments that led to the Second Quantum Revolution***

Chairman: Saverio Pascazio Università degli Studi di Bari

13.00-13.20 **Giorgio Parisi** Università di Roma "La Sapienza" -Physics Nobel Prize 2022 (remote connection)

Quantum Simulators

13.20-13.40 **Anthony J. Leggett** Urbana University - Physics Nobel Prize 2003 (remote connection)

Echoes of Classical Antiquity and Quantum Paradoxes: The Challenge to Realism in the EPR-Bell Experiments

13.40-13.45 **John Michael Kosterlitz** – Brown University - Physics Nobel Prize 2016 (remote connection)

Topological Transitions in Quantum Physics (greetings with a message)