

Contributions from Pilot Projects in Quantum Technology Education as Support Action
to Quantum Flagship

Italian Quantum Weeks

outreach activities to enhance quantum awareness

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Abstract. The three-year project Italian Quantum Weeks was born from the desire to take the opportunity of the World Quantum Day (April 14) to try to spread the knowledge of quantum mechanics and quantum technologies in schools and, more generally, to the entire citizenry. IQWs involves more than 130 researchers, technicians, disseminators, communicators, teachers, belonging to more than 40 research institutions, universities, scientific societies, in 17 Italian cities.

Introduction

With the advent of Quantum Technologies that exploit the quantum properties of matter, the Second Quantum Revolution is officially started: Quantum Mechanics with all its peculiar features is no longer just a very effective theory to describe the microscopic world but has become a tool for the design of new devices. The control and manipulation of quantum properties (superposition and entanglement) of light and matter actually allow to realize quantum computers, secure communication protocols, simulations of complex quantum systems and new ultra-precise sensors.

The European funding plan "Quantum Technology Flagship" [1], started in 2016, aims to bring Quantum Technologies to maturity and at the same time to raise awareness of the change in cultural perspective that the Second Quantum Revolution requires from all of us.

In the framework of the Flagship, on the occasion of the first World Quantum Day (April 14, 2022) [2] we propose the Italian Quantum Weeks [3], several weeks from March 26 to May 31 dedicated to the exploration of the foundations and applications of Quantum Mechanics.

We have organized a network of researchers in different universities and research institutes in order to set up a didactic/dissemination exhibition, educational games, activities and interactive workshops, to be proposed to students and general public, as well as lectures and guided tours to research laboratories. We aim at offering school students and citizens an interactive experience of the peculiar behaviour of the quantum world and of its immense application potential.

We have directly involved researchers active in Quantum Mechanics and Quantum Technologies in a common work of dissemination, to elaborate contents and communication strategies so that the conveyed message is scientifically precise and effective at the same time.

Till now more than 130 researchers, technicians, disseminators, communicators, teachers, belonging to more than 40 research institutions, universities, scientific societies, in 17 Italian cities are involved in the project.

Evaluation activities of the events will be carried out in the different locations.

Acknowledgements

This contribution is presented by Maria Bondani, national coordinator of the Italian Quantum Weeks project on behalf of all the participants (see the names in the webpage <https://www.quantumweeks.it/chi-siamo/>) without whom this activity would not have been possible.

References

- [1] <https://qt.eu/>
- [2] <https://worldquantumday.org/>
- [3] <https://www.quantumweeks.it>