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26. Pauli Colloquium

in collaboration with

Physics Colloquium TU Wien

21. June 2024

14:30

Festsaal

Karlsplatz 13

From Einstein and Bell to quantum technologies: entanglement in action

ALAIN ASPECT

Inst. d'Optique – Univ. Paris-Saclay “Orsay”

As pointed out by Einstein, and confirmed by the violation of Bell's inequalities, entanglement of separated particles is an extraordinary feature of quantum mechanics, suggesting some kind of non-locality. It is now used in quantum technologies. After recalling what are Bell's inequalities and their experimental tests, I will show how the notion of non-locality provides fruitful intuitions for some quantum communication methods.

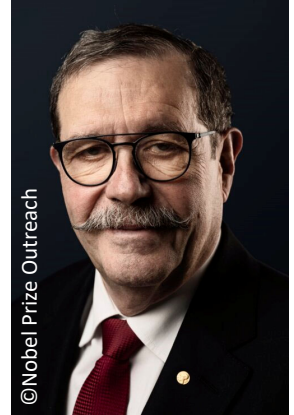
Date: 21.06.2024

Time: 14:30

Place: TU Wien, Festsaal, Karlsplatz 13

A buffet will be offered at around 15:30

Prof. Alain Aspect is a French experimental quantum physicist. Currently he is Professor at the Inst. d'Optique-Univ. Paris-Saclay and Professor at the École Polytechnique. He is an alumnus of ENSET Cachan (now ENS Paris-Saclay) and Orsay



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University and directeur de recherche émérite of the CNRS.

He is an alumnus of ENSET Cachan (now ENS Paris-Saclay) and Orsay University and directeur de recherche émérite of the CNRS.

He received his “doctoral degree 3ième cycle” in 1971 and defended his “doctoral thesis” (“these d'état”, equivalent to “habilitation”) in 1983 at the Institut d'Optique.

In his thesis, he focused on experimental tests of the foundations of quantum mechanics (tests of Bell's inequalities), for which he was awarded the **2022 Nobel Prize in Physics** along with John Clauser and Anton Zeilinger.