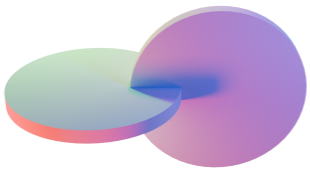

GIREP-EPEC
Transforming physics learning via Research & Practice
LEIDEN, 2025

Contribution ID: **204** Type: **Workshop**

Hands-on and kinaesthetic activities to teach quantum mechanics in an engaging, visual way - QUANT

Wednesday 2 July 2025 09:00 (1h 30m)

The rapid advancement of quantum technologies in recent years has emphasized the need to incorporate quantum mechanics into education at various levels. However, introducing complex concepts such as entanglement, macroscopicity or quantum cryptography at the high school level remains a challenge, since they rely on advanced notions in algebra. In this workshop, we present hands-on and kinaesthetic activities to overcome that challenge and make such concepts easy to visualize and understand. The activities require minimal materials and are designed to be accessible to students without prior mathematical knowledge, making them straightforward to implement in classrooms.

Education level

Age 15-18 (Secondary education)

Physics topic

Quantum mechanics

Research focus

Innovative instructional strategies and pathways

Research method

Educational design research (Qualitative research)

Organizing preference criteria

Physics topic

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Session Classification: Workshops

Track Classification: Quantum education (QUANT)