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GIREP-EPEC conference 2023
Physics learning promoting culture and addressing societal issues

Contribution ID: **112** Type: **Oral presentation**

Teaching the subtleties of entanglement via the delayed-choice two-slit experiment with polarizers

Tuesday 4 July 2023 16:00 (20 minutes)

Single-particle entanglement requires at least two degrees of freedom for the particle that is used to make a nonfactorizable superposition. Using a two-slit experiment with horizontal and vertical polarizers over each slit, respectively, we illustrate how one measures at the slits to create an entangled state, followed by a delayed-choice placement of a second polarizer (before the photons hit the screen) to control the particle-like, or wave-like nature of the final observed pattern. This approach is used to teach (both non-scientists and undergraduates) the subtleties of entanglement and how delayed-choice experiments actually work.

How would you like to present your contribution?

Hybrid from my own country (later in the conference day, best for Americas ...)

Target education level (primary)

University education

Target education level (secondary, optional)

Higher-secondary education

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Session Classification: Hybrid session - later

Track Classification: Innovative strategies and pathways to improve physics education at university