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

Contribution ID: **135** Type: **Oral presentation**

Enhancing sense-making in teachers through Photogate-based Period determination of a Bar Pendulum

Friday 4 July 2025 09:00 (20 minutes)

This study explores how physics teachers from undergraduate colleges in India develop sense-making abilities while using a photogate to measure the period of a bar pendulum's oscillation. Thirty-five participants arranged experimental setup and analyzed data to overcome challenges like measurement discrepancies caused by asymmetry. Teachers initially struggled to interpret observations but later recognized the importance of symmetric configurations and full oscillation setups for accurate measurements. Discussions highlighted the advantages of multiple oscillations and the superior repeatability of photogate results over manual stopwatch readings. The findings underscore the need for careful experimental design to enhance systematic thinking and reduce errors.

Education level

Pre-service and in-service teacher education

Physics topic

Other

Research focus

Innovative instructional strategies and pathways

Research method

Innovative research strategies (Try-out) (Qualitative research)

Organizing preference criteria

Education level

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Track Classification: Physics teacher education & Professional learning (TEACH)