# GIREP-EPEC

Transforming physics learning via Research & Practice
LEIDEN, 2025

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# Leveraging AI for Rapid Generation of Physics Simulations in Education: Building Your Own Virtual Lab

*Monday 30 June 2025 16:30 (1 hour)*

Generative AI is revolutionizing education by enabling dynamic and personalized learning tools. This talk presents a methodology for creating physics simulations using AI models such as ChatGPT and Claude. By leveraging these tools, educators and learners can generate simulations of physical phenomena without prior coding expertise.

Primary simulations were selected to demonstrate the versatility of the AI-generated tools, representing diverse topics typically taught in introductory physics courses. These examples demonstrate how a generic, adaptable AI prompt can support educators and students. Validation processes ensure accuracy and usability, including technical checks for responsiveness and physical tests for consistency with theoretical models.

## Education level

Age over 18 (excluding teacher education)

## Physics topic

Interdisciplinary topics

## Research focus

Artifical Intelligence

## Research method

Other

## Organizing preference criteria

Track

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**Session Classification:** Poster session

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