

Session Program

30 June 2025 to 4 July 2025



GIREP-EPEC

Transforming physics learning via Research & Practice
LEIDEN, 2025

GIREP-EPEC 2025 Conference, Leiden, The Netherlands

Poster session

Leiden University, Gorlaeus building
Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>

Monday 30 June

16:30

Poster session

Poster Session | **Location:** Gorlaeus 'schotel'

Introducing large language models (LLMs) in physics education: A module for future teachers

Speaker

Eugenio Tufino

Implementation of modular smartphone experiments in physics lessons using the phyphox kit

Speaker

Marija Herdt

Student Model of Engagement in DC circuits

Speaker

Dr Ignatius John

How social belonging and performance varies across demographic groups in first-year science students

Speaker

Parinaz Abbasi

Elementary Pre-service Teachers' Conceptual Representations of Electrical Circuits Functionality

Speaker

Prof. Abdeljalil Métioui

Inquiry-based learning of nuclear physics using VR learning module

Speaker

David Smrcka

Development of an online teacher training course for modern quantum physics teaching

Speaker

Philipp Scheiger

How contact with CERN researchers shapes students' perceptions of physicists

Speaker

Adelina Lintuluoto

What makes an airplane take off right or left? Physic explain!

Speaker

Daniel Dziob

Physics at the airport and it smoothly implementation into educational workshops

Speaker

Szymon Matlingiewicz

Teaching physics through thematic events.

Speaker

Hanna Kościelny

Four-Year Research on the Learning Using Mentors (LUM) Method: Implementation and Experience**Speaker**

Jaroslav Šmahel

Náboj Physics - the international physics competition**Speaker**

Jaroslav Valovcan

Physics Curriculum for Secondary Schools - Starting Points Grounded Among Leading Physicists and Other Stakeholders**Speaker**

Petr Kolář

FEDORAS' Academy: STEM education for envisioning sustainable futures**Speaker**

Emily Michailidi

How good AI detectors are the secondary school students in the field of science?**Speaker**

Péter Kosztyó

An inventory on the principle of relativity and the principle of equivalence in classical mechanics: investigating misconceptions and pitfalls in reasoning**Speaker**

Pasquale Onorato

Physics in the context of seismology: experiments and activities with the Raspberry Shake**Speaker**

Angela Fösel

Implementation of network theory in the design of a physics curriculum**Speaker**

Alejandra Ibarra Morales

Analysis of Performance of Slovak Pupils in the Physics Part of IJSO According to Revised Bloom's Taxonomy in 2023 and 2024**Speaker**

Patrik Rezák

Work-life related exercise with vehicle experiment**Speaker**

Antti Rissanen

Exploring Materials Science through Educational Activities in Informal Learning Environments**Speaker**

Dimitris Stavrou

International Commission on Physics Education (C14-IUPAP): Purpose and Activities

Speaker

Angela Fösel

Interdisciplinary school worksheets (physics-biology)

Speaker

Dominika Korcanova

Insight into Students' Interest in the Pillars of Quantum Technologies

Speaker

Ismet N. Dogan

Lesson materials on quantum technology for upper secondary education

Speaker

Rutger Ockhorst

Multidimensional Authenticity in Task Design: Teaching Astronomy and Physics with Historical Stellar Spectra

Speaker

Marvin zur Mühlen

Adaptive learning in mechanics using artificial intelligence

Speaker

Márton Burkovics

Enhancing students' comprehension of equations with physics specific strategies

Speaker

Julia Hofmann

Students' reasoning in choosing measurement instrumentation

Speaker

Dr Micol Alemani

Augmented reality simulation of parallel plate capacitor for mobile devices

Speaker

Andrej Vidak

The Universe as a Physics Laboratory: Assessment of parents' attitudes and their support of astronomy education at primary school

Speaker

Ms Karin Schmögnerová

Embodied Narratives for Physics Education: Bridging Concepts, Emotions, and Movements

Speakers

Marco Giliberti, Luisa Lovisetti

Draw a Scientist: Development of student drawings in middle schools within a four-year STEM engagement project

Speaker

Markus Obczovsky

Evaluating Misconceptions About the Greenhouse Effect in Textbooks

Speaker

Alessandro Salmoiraghi

Simultaneous measurement of precession and nutation using a wireless sensor in a gyroscope practical experiment**Speaker**

Dr R.J.H. Klein-Douwel

Smartphone-Based Physics Experiments: Evaluating the Accuracy and Precision of Embedded Sensors**Speaker**

Mr Jakub Žoldák

Reflections on Physics Education: Long-Term Memories and Opinions About Physics Learning**Speaker**

Mr Tomáš Kopřiva

Back to basics: reinventing a simple cart experiment for kinematics**Speaker**

Katarina Jelcic

School physics experiments with Arduino in lower secondary education**Speaker**

Lukáš Richterek

Out-of-field Teaching in Physics and Science - A Systematic Review**Speaker**

Stefan Gritsch

Development of a Learning Arrangement on the Topic of Wind for Primary Education**Speaker**

Prof. Ingrid Krumphals

Pupils' mindset on physics and its changes in the first year of teaching - a questionnaire survey**Speaker**

Jan Říha

Bounce Light System Device for Teaching Optics to Elementary School Students**Speaker**

Claudia Carolina García Gaitán

Modelling Quantum Curriculum Innovation**Speaker**

Mr Jonas Bley

Bridging Lab work and History of Science: Enhancing Scientific Literacy Through Inquiry and Reflection on the Nature of Science**Speaker**

Pasquale Onorato

Hands-on kit for digital electronics

Speaker

Árpád Bordás

Use of ISLE in STEM lessons to promote scientific thinking**Speaker**

Elisabeth Rogl

How can embodied learning in the physics classroom energize teachers to promote inclusive practices in secondary education?**Speaker**

Kars Verbeek

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

Yossi Ben Zion

Basic physics in energy transition: a thematic course**Speaker**

Joao Pereira

Assessing students' carbon competence regarding the effectiveness of climate action measures**Speaker**

Sarah Wildbichler

Sabir: a codesign process to foster IBL in the Mediterranean**Speaker**

Stefano Sandrelli

Compromise between mathematics and physics in teaching: instructors' views on the role of mathematics in advanced physics courses for teachers**Speaker**

Dr Dan Klein

Developing Scientific Agency in Bachelor Physics Students**Speaker**

Nazly Sedghinejad

Developing digital and analogue materials for teaching mechanics in secondary level I - Initial test results**Speaker**

Kerstin Lindmaier

Amplitude Modulation Measurements using Mobile Device Sensors**Speaker**

Dr Madhusudan Ch

Stimulation of pupils to experimental activities through learning activities**Speaker**

Klára Velmovská

Aspects of Physics Education and the role of autochthonous cultures in the São Paulo State curriculum

Speaker

Dr Carlos Mometti

Gamification of Introductory University Physics Courses**Speaker**

Szabolcs Varga

LEONARDO DA VINCI DID NOT DISCOVER THE TIME SQUARE LAW BEFORE GALILEO GALILEI**Speaker**

Prof. MARCOS CESAR DANHONI NEVES

AC current through an open circuit: Demonstrating the role of a capacitor as a reservoir of charge**Speaker**

Arvind Arvind

Possibilities of gamification in high school physics education**Speaker**

Viktoria Csikos

Rich tasks for developing primary students' productive dispositions in physics and mathematics**Speaker**

Dr Eilish McLoughlin

Study of rotational motion by a fidget spinner and smartphone**Speaker**

Prof. Onofrio Rosario Battaglia

Analyze different student competencies using a computational and experimental task**Speaker**

Marta Mlynczyk

17:30

Tuesday 1 July

13:00



13:30

Poster session: Poster session

Poster Session | **Location:** Gorlaeus 'schotel'

Thursday 3 July

13:00



13:30

Poster session: Poster session

Poster Session | **Location:** Gorlaeus 'schotel'