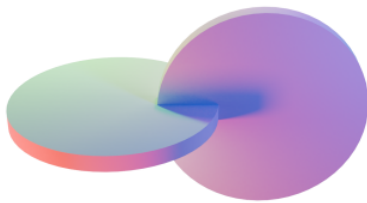


## **Session Program**

**30 June 2025 to 4 July 2025**



# **GIREP-EPEC**

Transforming physics learning via Research & Practice  
LEIDEN, 2025

## **GIREP-EPEC 2025 Conference, Leiden, The Netherlands**

### ***Parallel oral presentations***

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

## Monday 30 June

13:30

### Parallel oral presentations: Parallel oral presentations 111 MATH

**Session** |

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

**Convener:** Kristina Zuza

13:30-13:50

#### Global Blind Spot in Understanding Trigonometric Derivatives: A Multinational Analysis

**Speaker**

Yossi Ben Zion

13:50-14:10

#### Teachers, Students, and the Physmatics Between Them

**Speaker**

Mrs Hadas Levi

14:10-14:30

#### Roles of mathematics in physics education: a systematic review

**Speaker**

Elina Palmgren

14:30-14:50

#### University students' difficulties related to transformation between graphical and algebraic representations in the case or non-constant acceleration kinematics

**Speaker**

Kristina Zuza

15:00

13:30

### Parallel oral presentations: Parallel oral presentations 112 QUANT

**Session** |

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

**Convener:** James Freericks

13:30-13:50

#### Pre-service teachers' flexible use of classical and quantum ontologies during a Kundt's tube analogy assignment

**Speaker**

Mr Paul de Haas

13:50-14:10

#### How to teach quantum physics to humanistic students and why

**Speaker**

Leonardo Colletti

14:10-14:30

#### Factors that Support Classroom Implementation of Quantum Concepts in High School

**Speaker**

Karen Matsler

14:30-14:50

#### Teaching quantum mechanics without waves or matrices

15:00

**Speaker**

James Freericks

13:30

**Parallel oral presentations: Parallel oral presentations 113 TEACH****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Iain Moore

13:30-13:50

**How do pre-service physics teachers envision physicists?****Speaker**

Angelika Bernsteiner

13:50-14:10

**Supporting Teachers in Planning and Implementing Digital Data Acquisition in the Physics Classroom****Speaker**

Lea Runge

14:10-14:30

**The introduction of circuits in secondary science education: teachers' views on confidence and content****Speaker**

Iain Moore

14:30-14:50

**Advanced physics courses for teachers - Physicists' perceptions****Speaker**

Dr Dan Klein

15:00

13:30

**Parallel oral presentations: Parallel oral presentations 114 INSTR****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Jenaro Guisasola

13:30-13:50

**Fluid Mechanics and the Ways Pupils Think****Speaker**

Daša Červeňová

13:50-14:10

**College Science Students' Scientific Reasoning in Kinematics: A Resources Framework Analysis****Speaker**

Dr Özden Şengül

14:10-14:30

**The impact of different representation types in multi-representational physics instruction****Speaker**

Ana Susac

14:30-14:50

**Students' epistemic difficulties in analysing Energy Transfer Problems in Mechanics**

15:00

**Speaker**

Jenaro Guisasola

13:30

**Parallel oral presentations: Parallel oral presentations 115 CONT****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Pradip Deb

13:30-13:50

**Exploring secondary school students' operationalisation of relativistic thought experiments****Speaker**

Paul Alstein

13:50-14:10

**CREDO-edu - how to make a citizen science project about Cosmic Rays****Speaker**

Melania Deresz

14:10-14:30

**Students' reasoning on the characteristics of electromagnetic radiation and its effects****Speaker**

Dr Nikolaos Zarkadis

14:30-14:50

**An Investigation of Radiation Knowledge in First Year Medical Radiations and Pharmacy Students****Speaker**

Pradip Deb

15:00

## Tuesday 1 July

09:00

### Parallel oral presentations: Parallel oral presentations 211 ASTRO

**Session** |

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

**Conveners:** André Heck, André Heck

09:00–09:20

#### Sun-Earth-Moon system: Difficulties of secondary school students in understanding eclipses

**Speaker**

ELVIRA GUTIERREZ JIMENEZ

09:20–09:40

#### Exploring Student Estimates of Astronomical Scales: Impact of Question Formulation and Visualisation

**Speaker**

Willem Keppens

09:40–10:00

#### Student's Understanding of the Celestial Sphere: a Qualitative Interview Study

**Speaker**

Judith Vandewiere

10:00–10:20

#### Avoiding tidal misconceptions - a teacher guide

**Speaker**

Dr André Heck

10:30

09:00

### Parallel oral presentations: Parallel oral presentations 212 TEACH

**Session** |

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

**Convener:** Marian Kires

09:00–09:20

#### How do Different Games make a Difference? Pedagogical Considerations and Teachers' Perspectives when integrating Card Games into Physics Teaching

**Speaker**

Smadar Levy

09:20–09:40

#### Artificial Intelligence in Pre-Service STEM Teacher Training

**Speaker**

Prof. Jozef Hanč

09:40–10:00

#### Teacher students' expression of TPACK in GeoGebra-based lesson planning

**Speaker**

Lorena Solvang

10:30

10:00–10:20

**Flexible learning environment for the DigCompEdu competences development of STEM teachers**

**Speaker**  
Marian Kires

09:00

**Parallel oral presentations: Parallel oral presentations 213 MATH**

**Session** |

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

**Convener:** JOSEPH DE MESA

09:00–09:20

**Fostering Interdisciplinary Learning: Mathematics and Physics in Secondary Education**

**Speaker**  
Stefania Lippiello

09:20–09:40

**Probing students' difficulties in electromagnetic induction using an approach based on Conceptual Blending theory.**

**Speaker**  
Ms Saurabhee Huli

09:40–10:00

**Enhancing Kinematics Understanding Through a Real-Time Graph-Based Motion Video Game**

**Speaker**  
Mateo Dutra Shaw

10:00–10:20

**Exploring Conceptual Structures of PhD in Education Students Specializing in Physics and Mathematics: A Case Study on the Concept of Vector Analysis**

**Speaker**  
JOSEPH DE MESA

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 214 IDENT**

**Session** |

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

**Convener:** Daniel Cottle

09:00–09:20

**Pedagogical partnerships as a distinctive and inspiring strategy for curriculum revision**

**Speakers**  
Martijn Hunter, Ruth Buning

09:20–09:40

**The role of academic engagement on freshmen's performance in an Introductory Physics course**

**Speaker**  
Dr Silvia Galano

09:40–10:00

**The expert-like attitudes of Finnish physics students by major subject and gender****Speaker**

Inkeri Kontro

10:00–10:20

**Levelling Up Physics - online tutorials for pre-university students of physics to address diversity in physics in higher education****Speaker**

Daniel Cottle

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 215 QUANT****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Dr Kim Krijtenburg-Lewerissa

09:00–09:20

**Why should high-school students learn Quantum Physics? Various stakeholders' perspectives****Speaker**

Dr Avraham Merzel

09:20–09:40

**History as a Tool for Clarity: Enhancing Quantum Mechanics Understanding through Key Historical Insights****Speakers**

Luisa Lovisetti, Marco Giliberti

09:40–10:00

**Evaluation of an Activity Connecting Art and Quantum Concepts for Primary Education****Speakers**

Leonie Sonneveld, Rutger Ockhorst

10:00–10:20

**What quantum topics and concepts should be included in an ideal secondary school quantum physics curriculum?****Speakers**

Dr Kim Krijtenburg-Lewerissa, Philipp Bitzenbauer

10:30

15:30

**Parallel oral presentations: Parallel oral presentations 221 TEACH****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Stephen Gammell

15:30–15:50

**Diagnosis of Elementary Pre-service Teachers' Alternative Conceptions before and after Hands-on Laboratory about Electrostatic****Speaker**

Abdeljalil Metiou

15:50-16:10

**Exploring the Traits of Competent Physics Teachers: Insights from Secondary School Physics Teachers**

**Speaker**  
Deena Davis

16:10-16:30

**Examining Ethiopian Physics Teachers' Conceptual Understanding and Pedagogical Content Knowledge in Mechanics**

**Speaker**  
Dereje Aynekulu Dejene

16:30-16:50

**Influence of a professional learning programme in physics on teachers' beliefs and classroom practices**

**Speaker**  
Stephen Gammell

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 222 THERMO**

**Session** |

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

**Convener:** Mojca Čepič

15:30-15:50

**Assessing Secondary School Students' Understanding of the First Law of Thermodynamics: Challenges and Insights**

**Speaker**  
Petra Plavsic

15:50-16:10

**Effect of Experiment-Based and Mathematical Modeling Approaches on Conceptual Understanding of Thermodynamics**

**Speaker**  
İrem Ören

16:10-16:30

**Carnot's Waterfall and the Notions of Power and Energy**

**Speaker**  
Prof. Hans U Fuchs

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 223 QUANT**

**Session** |

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

**Convener:** Benjamin Zwickl

15:30-15:50

**Grasping the Invisible: Design and Implementation of Electronic Quantum Dice**

**Speaker**  
Bart Folkers

15:50-16:10

**NV-center magnetometer experiment for school and its educational concept**



**Speaker**

Mr Simon Koppenhöfer

16:10-16:30

**God plays quantum dice - teaching bosons and fermions to high school students****Speaker**

Dr Efraim Yehuda Weissman

16:30-16:50

**Identifying opportunities to integrate quantum sensing into bachelor's-level physics courses****Speaker**

Benjamin Zwickl

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 224 MATH****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Daniele Provenzano

15:30-15:50

**Comparison of Student Reasoning of Partial Derivatives Before and After the Instruction****Speaker**

Dr Zeynep Topdemir

15:50-16:10

**Key Design Principles for Enhancing the Transfer of Mathematics to Physics in Upper Secondary Education****Speaker**

Süleyman Turşucu (PhD)

16:10-16:30

**When Assumptions Make the Difference: The Curious Case of the Mistreated Bernoulli's Equation****Speaker**

Daniele Battesimo Provenzano

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 225 LAB****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Forrest Bradbury

15:30-15:50

**Bottom-up implementation of learning goals in physics lab courses by a hands-on didactic training of instructors****Speaker**

Sebastian Schellhammer

15:50-16:10

**Quantifying students' collective creativity in designing soft matter experiments****Speaker**

Anna Bakker

16:10-16:30

**Adopting Nontraditional Labs in a Professional Learning Community - an Ecological Perspective**

**Speaker**

Adi Noga

16:30-16:50

**Open inquiry in undergraduate lab courses**

**Speaker**

Forrest Bradbury

17:00

## Wednesday 2 July

09:00

### Parallel oral presentations: Parallel oral presentations 311 IDENT

**Session** |

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

**Convener:** Joanna Francesca Behrman

09:00–09:20

#### Understanding the nature of science and the development of a scientist identity through research internships in modern physics

**Speaker**

Marijn van Nijhuis

09:20–09:40

#### A Structural Model of Grit, Expectancy-Value and 21st Century Skills on the Physics Achievement of STEM College Freshmen Students and Its Implications on Tertiary STEM Education

**Speaker**

Alwielland Bello

09:40–10:00

#### Investigating the Dynamics of Sense of Belonging to Physics and Physics Identity in High School Physics Classes

**Speakers**

Kübra Özmen, merve biçmen şenol

10:00–10:20

#### A network study using historical data to assess the production of women in physics by women's colleges

**Speaker**

Joanna Behrman

10:30

09:00

### Parallel oral presentations: Parallel oral presentations 312 TEACH

**Session** |

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

**Convener:** Estelle Tison

09:00–09:20

#### Exploring the Photoelectric Effect and the Electromagnetic Spectrum through Art Analysis in Physics Education

**Speaker**

Ms Brenda Ixcuiname Saavedra

09:20–09:40

#### Effectiveness of Peer Mentoring for Helping College Physics Faculty Members Improve Their Teaching in Japan

**Speaker**

Sachiko Tosa

09:40–10:00

**Preschool teacher training in physics under the new Mexican school approach**

**Speaker**

Dr Mario Humberto Ramírez Díaz

10:00–10:20

**The Meaning of Energy in Physics Teaching in France (grades 7 to 9): an Analysis of Official Documents.**

**Speaker**

Estelle Tison

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 313 INTER**

**Session** |

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

**Convener:** Zuzana Jeskova

09:00–09:20

**ESG Junior Program: Knowledge, Skills, and Purpose**

**Speakers**

Ivana Štibi, Mrs Marija Gaurina

09:20–09:40

**Bridging Sports and Physics: Exploring Experiential Learning, Motivation, and Conceptual Gains among Indian Student Community in Qatar**

**Speaker**

Mohammed Vallikkaparambil

09:40–10:00

**Enhancing University Physics and Chemistry Education through Interdisciplinary Research: The ENACT Project**

**Speakers**

Mirela Kaczmarek, Radoslaw Wasielewski

10:00–10:20

**STEM Investigations: Integrating Interdisciplinary Learning to Solve Real-World Problems**

**Speaker**

Zuzana Jeskova

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 314 INSTR**

**Session** |

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

**Convener:** Tetyana Antimirova

09:00–09:20

**Addressing Inequitable Access to Collegiate Level Physics Education in the U.S.**

**Speaker**

Dr Geraldine Cochran

09:20–09:40

**It's all about the BASICS: a framework for a hands-on electronic course**

**Speaker**

Margreet Docter

09:40-10:00

**Adaptive, study-accompanying refreshment of school mathematical skills in the STEM degree programs with a focus on Physics and Medical Physics**

**Speaker**

Caroline Wortmann

10:00-10:20

**Concept Mapping in Undergraduate Physics Courses: A Case Study in a Nuclear Physics Course**

**Speaker**

Tetyana Antimirova

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 315 AI**

**Session** |

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

**Conveners:** Guillermina Ávila García, Guillermina Ávila García

09:00-09:20

**Development and Validation of a Performance-Based AI Literacy Assessment Test for High-School Students Enabling Predictions of their Performance in Tasks Involving AI Tools**

**Speaker**

Tobias Patrick Treczoks

09:20-09:40

**Validating chained computerised adaptive testing for the Force Concept Inventory**

**Speaker**

Jun-ichiro Yasuda

09:40-10:00

**Optimizing Large Language Models Assisted Learning in Experimental Physics Lab**

**Speaker**

Marina Babayeva

10:00-10:20

**From the atomic nucleus to popcorn: Guided use of AI for the development of critical thinking in IPN high school**

**Speakers**

Dr Mario Humberto Ramírez Díaz, Guillermina Ávila García

10:30

## Thursday 3 July

09:00

### Parallel oral presentations: Parallel oral presentations 411 TEACH

**Session** |

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

**Convener:** Olga Gkioka

09:00–09:20

#### Developing Student Competences for Sustainable Development: Are Teachers Prepared

**Speaker**

Dr Dury Bayram

09:20–09:40

#### E-R-R teaching framework implemented in future physics teacher education

**Speaker**

Tereza Hrouzková

09:40–10:00

#### Pre-service physics teachers learn to write reports in the instructional physics labs

**Speaker**

Olga Gkioka

10:30

09:00

### Parallel oral presentations: Parallel oral presentations 412 LAB

**Session** |

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

**Convener:** Dr Sapna Sharma

09:00–09:20

#### Assessing Self-Efficacy in University Physics Laboratories: The Impact of Teacher and Peer Collaboration

**Speaker**

Cecilia Stari

09:20–09:40

#### Bridging Theory and Experimentation: Identifying the Most Accurate Model for Soap Bubble Deflation

**Speaker**

Daniele Battesimo Provenzano

09:40–10:00

#### Error and Uncertainty: An Incoherent Hybrid in French High School Education

**Speakers**

Nicolas Décamp, Julien Browaeys

10:00–10:20

#### Tracking the Swing: Unveiling the Physics of Increasing Amplitude

**Speaker**

Dr Sapna Sharma

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 413 DIGI****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Dr Matteo Tuveri

09:00–09:20

**Exploring the Effectiveness of AR Headsets and AnReAL in Teaching Motion Concepts****Speaker**

Caterina Giovanzana

09:20–09:40

**Exploring Potential Use Cases of Immersive Technology in Secondary School Physics****Speaker**

Dr PHILIPPA PETTS

09:40–10:00

**Advancing Physics Computational Literacy with AI and Open-Source SageMath****Speaker**

Dominik Borovský

10:00–10:20

**Using Digital Storytelling to Bring Gravitational Waves to School: the GRAVIS Project****Speaker**

Dr Matteo Tuveri

10:30

15:30

**Parallel oral presentations: Parallel oral presentations 421 TEACH****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Dr Eilish McLoughlin

15:30–15:50

**Coherent Argumentation in Pre-Service Science Teachers' Computational Essays****Speaker**

Peitsa Veteli

15:50–16:10

**Exploring Preservice Physics Teachers' Reasoning of Measurement Uncertainty****Speaker**

Osman Aksit

16:10–16:30

**Empowering future physics teachers to cultivate critical thinking****Speaker**

Dr Farahnaz Sadidi

16:30–16:50

**An examination of physics teachers' reflective practices****Speaker**

Dr Eilish McLoughlin

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 422 LAB****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Freek Pols

15:30–15:50

**ToPLab: sustaining innovation in physics labs through Faculty Learning Communities****Speaker**

Dr Marta Carli

15:50–16:10

**Designing and Implementing TLSs for Digitally Enhanced Physics Labs: insights from the ADELANTE Project****Speaker**

Lucia Gabelli

16:10–16:30

**Evaluating Scientific Argumentation Skills in Undergraduate Lab Reports at scale using AI****Speaker**

Oxana Andriuc

16:30–16:50

**Towards Open Physics Education: Teaching with Jupyter (Note)Books****Speaker**

Freek Pols

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 423 INF****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Mirela Kaczmarek

15:30–15:50

**AN ANALYSIS OF QUESTION TYPE IN PHYSICS-RELATED EXHIBITS' LABELS AT SCIENCE CENTRES****Speaker**

Ms İrem Gezer

15:50–16:10

**Quantum Party at Lowlands: The Impact of a Pop-Up Exhibit about Quantum Technologies****Speaker**

Vincent Koeman

16:10–16:30

**40 years of Physics Correspondence Seminar and its role in education****Speaker**

Jaroslav Valovcan

16:30–16:50

**More Than a Competition: How Physics Contests in Poland Offer Opportunities to Build Varied Skills**



17:00

**Speakers**

Dagmara Sokółowska, Mirela Kaczmarek

15:30

**Parallel oral presentations: Parallel oral presentations 424 CLIM****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Thomas Schubatzky

15:30-15:50

**In-service science teachers' adaptation of integrated STEM teaching modules on Climate Change****Speaker**

Emily Michailidi

15:50-16:10

**Physics Debate: an Educational Path on Energy and Climate****Speaker**

Dr Marco Ghilardi

16:10-16:30

**Poweri Noi! Watt should we do? A Team Board Game on Energy Transition and Climate Change****Speaker**

Luca Zatti

16:30-16:50

**Knowledge of Everyday Energy Quantities and Its Relationship to Self-Reported Behaviour****Speaker**

Prof. Thomas Schubatzky

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 425 EVAL****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Eugenio Tufino

15:30-15:50

**Dissecting the interaction between alternative grading, mindset, and self-efficacy in introductory physics courses****Speaker**

Prof. Christopher Fischer

15:50-16:10

**Active learning and computational simulation of a bouncing ball****Speaker**

Dr Rubén Sánchez Sánchez

16:10-16:30

**Using the Item Response Theory to Validate the Heat and Temperature Conceptual Evaluation test****Speaker**

Prof. Onofrio Rosario Battaglia

16:30-16:50

**Investigating the impact of digitally-enhanced laboratories on students' scientific abilities and experimental attitudes****Speaker**

Eugenio Tufino

17:00

15:30

**Parallel oral presentations: Parallel oral presentations 426 INSTR****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Dr Ioannis Lefkos

15:30-15:50

**Using The Trailer Technique to Introduce Marie Curie's Life and Raise Awareness of Being a Woman in Physics****Speakers**

Dr Beril Yılmaz Senem, Dr Şule Kösem

15:50-16:10

**Analysis of IBDP Physics Curriculum in terms of its Inclusion of Behavioral Profile Characteristics of a Scientific Literate****Speaker**

Zeynep Tugba Kahyaoglu

16:10-16:30

**Educational games in teaching physics****Speaker**

Ladislav Janiga

16:30-16:50

**Empowering Primary School Educators in Inquiry-Based Learning: Evaluating the Impact of a Training Program****Speaker**

Dr Ioannis Lefkos

17:00

## Friday 4 July

09:00

### Parallel oral presentations: Parallel oral presentations 511 LAB

**Session** |

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

10:30

09:00

### Parallel oral presentations: Parallel oral presentations 512 QUANT

**Session** |

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

**Convener:** Gesche Pospiech

09:00–09:20

#### Quantum for the Curious: An academic minor to enhance quantum literacy for non-physics students

**Speaker**

Carolien Castenmiller

09:20–09:40

#### Efficacy of Doodles in Learning Quantum Concepts: An Innovative Visual Pedagogical Approach

**Speaker**

Prof. PK Ahluwalia

09:40–10:00

#### Formal and informal approaches to quantum mechanics using quantum cryptography

**Speaker**

Maria Bondani

10:00–10:20

#### Teaching quantum science between interpretational debate and pragmatism: learning about Nature of Science

**Speaker**

Gesche Pospiech

10:30

09:00

### Parallel oral presentations: Parallel oral presentations 513 TEACH

**Session** |

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

**Convener:** Tim Bouchée

09:00–09:20

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

**Speaker**

Shirish Pathare

09:20–09:40

#### Exploring Geometric Optics through Project-Based Learning: A Comparative Study

**Speaker**

Márta Flóra Tar

09:40–10:00

**Exploring Teaching Strategies and Pedagogical Content Knowledge for Teaching the Band Gap Concept in Secondary Education****Speaker**

Tim Bouchée

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 514 OTHER****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Dominique Persano Adorno

09:00–09:20

**A learning path on electromagnetic waves for high school students****Speaker**

Danilo Catena

09:20–09:40

**Gender Differences in a Context-Based Test in Mechanics****Speaker**

Derya KALTAKCI GUREL

09:40–10:00

**Undergraduate students' conceptual understanding of electromagnetic waves****Speaker**

Dr Marco Costigliolo

10:00–10:20

**Enhancing Understanding of Electromagnetic Fields and Their Application Challenges through Open and Collaborative Active Learning****Speaker**

Prof. Dominique Persano Adorno

10:30

09:00

**Parallel oral presentations: Parallel oral presentations 515 INTER****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Vera Montalbano

09:00–09:20

**A STEAM Education Proposal from the Perspective of the Conceptual Fields Theory****Speaker**

PEDRO MENDES DOS SANTOS

09:20–09:40

**Inclusive science education: qualitative evaluation of an interdisciplinary teaching concept****Speaker**

Giulia Pantiri

09:40–10:00

**A powerful interdisciplinary storytelling about energy between history and human societies**

10:30

**Speaker**

Vera Montalbano

09:00

**Parallel oral presentations: Parallel oral presentations 516 METHOD****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Laura Gray

09:00–09:20

**Secondary School Students' Interpretation of Thermal Processes****Speaker**

Dr Alessandra De Angelis

09:20–09:40

**Adaptive Physics for Real Barbies and Kens - Special Educational Needs for Physically Disabled High School Students in Physics Classes****Speaker**

Anna Barsy

09:40–10:00

**Exploring the relation between physics, energy and sustainability with students, teachers and researchers: the Citizen Science School Rome Technopole case study****Speaker**

Adriana Postiglione

10:00–10:20

**A critical analysis of the C-TEIR process for assessing practical physics methods****Speaker**

Laura Gray

10:30

13:00

**Parallel oral presentations: Parallel oral presentations 521 TEACH****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Valentina Bologna

13:00–13:20

**An Evaluation of Argumentation-Based Studies on Physics Subjects Using the Toulmin Model****Speaker**

Ms Aysegul Tuysuz

13:20–13:40

**Characterising Dialogues in Upper-Secondary School Physics Classrooms****Speaker**

Patrick Diepenbroek

13:40–14:00

**Towards a theory of thinking and reasoning in physics education: the connection between dual processing theories and mental models****Speaker**

David Sands

14:00–14:20

**Examining Thinking Order Levels in Non-Traditional vs. Standard Physics Problems Through Revised Bloom's Taxonomy****Speakers**

Giovanna MODUGNO, Valentina BOLOGNA

14:30

13:00

**Parallel oral presentations: Parallel oral presentations 522 COGN****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Drew Rosen

13:00–13:20

**Visual attention and prior knowledge in identifying thermodynamic processes****Speaker**

Ms Paula Fehlinger

13:20–13:40

**The impact of spaced learning within physics lessons in secondary schools****Speaker**

Rachel Hartley

13:40–14:00

**Development of an inquiry-based teaching sequence on energy for secondary school****Speaker**

Prof. Maja Planinić

14:00–14:20

**Understanding the attention capture of a salient distracting feature in a friction force question****Speaker**

Drew Rosen

14:30

13:00

**Parallel oral presentations: Parallel oral presentations 523 DIGI****Session****Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1>**Convener:** Wim Bouwman

13:00–13:20

**Enhancing Engineering Education: A Digital Twin and Interactive Manual Approach for Dynamic Hands-On Learning****Speaker**

Bahareh Abdikivanani

13:20–13:40

**Exploring the Potential of Interactive e-Books for Enhancing Learning and Teaching in Physics and Astronomy****Speaker**

Rosaria Lena

13:40-14:00

**Digital Peer-Evaluation in Project-Based Learning: A BuddyCheck Case Study in BSc Electrical Engineering****Speaker**

Seyedmahdi Izadkhast

14:00-14:20

**Didactical Effect of Teaching with an Open Access Interactive Textbook on Electricity and Magnetism****Speaker**

Wim Bouwman

14:30

13:00

**Parallel oral presentations: Parallel oral presentations 524 LAB****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Prof. Ingrid Krumphals

13:00-13:20

**Empowering Advanced Physics Teaching through Remote Experimentation: Insights from LA-CoNGA physics****Speaker**

Dr Dennis Cazar Ramirez

13:20-13:40

**Online School Scientific Activities with Images of Real Experiments****Speaker**

Dr NORA LIA MAIDANA

13:40-14:00

**A School Science Activity based on the Experiment With Images of the Falling Cylinder****Speaker**

VITO ROBERTO VANIN

14:00-14:20

**A Remote Laboratory Learning Arrangement for Temperature-Dependent Resistance****Speaker**

Prof. Ingrid Krumphals

14:30

13:00

**Parallel oral presentations: Parallel oral presentations 525 INSTR****Session** |**Location:** Leiden University, Gorlaeus building, Einsteinweg 55 2333 CC Leiden <https://www.universiteitleiden.nl/en/locations/gorlaeus-building#tab-1> |**Convener:** Marilù Chiofalo

13:00-13:20

**Length contraction Thought experiment with Secondary students****Speaker**

Floor Kamphorst

13:20-13:40

**Teaching Model-based Reasoning in Physics Undergraduate Classrooms, using Computational Simulations**

**Speaker**  
Dr Asmita Redij

13:40-14:00

**Impact of an Acoustics Course on the Conceptual Understanding of Mechanical Waves Among First-Year Audiology Students**

**Speaker**  
Kübra Özmen

14:00-14:20

**Enhancing conceptual understanding and reasoning ability in challenging physics classes**

**Speaker**  
Prof. Marilù Chiofalo

14:30