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

Contribution ID: **115** Type: **Oral presentation**

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

Monday 30 June 2025 14:30 (20 minutes)

Abstract. The aim of this work is to detect the difficulties of second year (3rd semester) chilean students in kinematics with non-constant acceleration. The focus is on questions in which students receive the information in one representation (graphical or algebraic) and have to transform and answer in the other. The analysis was carried out by phenomenography, which allowed us to categorise the students' answers. The initial results show that although difficulties appear in both transformations, transformation from graphical to algebraic is more challenging for them. These results are intended to guide a future TLS to help students overcome the difficulties detected.

Education level

Age over 18 (excluding teacher education)

Physics topic

Other

Research focus

Student conceptions / Preconceptions / Misconceptions

Research method

Mixed method (qualitative & quantitative)

Organizing preference criteria

Physics topic

Author: URRUTIA, Any

Co-authors: Dr MERINO, Cristian (Chemistry Institute, CIDSTEM, Pontifia Universidad Católica de Valparaíso); GUISASOLA, Jenaro; ZUZA, Kristina (UPV/EHU (Applied Physics Department))

Presenter: ZUZA, Kristina (UPV/EHU (Applied Physics Department))

Session Classification: Parallel oral presentations

Track Classification: Interplay of mathematics and physics (MATH)