



Contribution ID: 213

Type: **Oral presentation**

## Comparison of Student Reasoning of Partial Derivatives Before and After the Instruction

*Tuesday 1 July 2025 15:30 (20 minutes)*

As a part of a broader project that aims to investigate students' mathematical understanding in physics, this study explores how students understand the partial derivatives of divergence and curl of vector field diagrams. Students are asked to draw vector field diagrams for the given partial derivative before the instruction. After the instruction they have asked to find the sign of the partial derivative of a certain vector field plot. Student difficulties finding partial derivatives of divergence and curl of vector field diagrams before the instruction and after the instruction will be compared.

### Education level

Age over 18 (excluding teacher education)

### Physics topic

Other

### Research focus

Student conceptions / Preconceptions / Misconceptions

### Research method

Educational design research (Qualitative research)

### Organizing preference criteria

Research focus

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**Session Classification:** Parallel oral presentations

**Track Classification:** Interplay of mathematics and physics (MATH)