

GIREP-EPEC conference 2023 Physics learning promoting culture and addressing societal issues

Contribution ID: 103

Type: Poster

## Some experiments to teach the physical bases of the greenhouse effect: thermal emission and selective absorption

Wednesday 5 July 2023 15:40 (20 minutes)

The understanding of the anthropic greenhouse effect (GHE) rests on two key concepts, namely thermal emission and the interaction of different kinds of electromagnetic radiation with different kinds of matter. A survey of the existing Physics Education research concerning the GHE and climate change shows that students have in general a poor understanding of such concepts. In this work, we present some experiments designed to foster their learning. We shall moreover show how the learning outcomes of the students have improved after the incorporation of these experiments in a pre-existing teaching-learning sequence focused on the physical bases of the GHE.

## How would you like to present your contribution?

Live in Košice (time slot to be allotted based on the programme)

## **Target education level (primary)**

Upper-secondary education

## Target education level (secondary, optional)

Lower-secondary education

**Primary author:** TOFFALETTI, Stefano (Physical Science Communication Laboratory, Department of Physics, University of Trento, Via Sommarive, 38050 Povo (Trento), Italy)

**Co-authors:** Mrs FIORELLO, Camilla (University of Trento, Department of Physics, Physical Science Communication Laboratory); TUFINO, Eugenio (University of Trento, Physics department); DI MAURO, Marco (University of Trento); MALGIERI, Massimiliano; ONORATO, Pasquale (University of Trento); OSS, Stefano (University of Trento); ROSI, Tommaso

**Presenter:** TOFFALETTI, Stefano (Physical Science Communication Laboratory, Department of Physics, University of Trento, Via Sommarive, 38050 Povo (Trento), Italy)

Session Classification: Poster session 1