

Teaching without teaching with “the show of Physics”: from the theatre to the classroom.

Marina Carpineti – Dipartimento di Fisica “Aldo Pontremoli” – Università degli Studi di Milano

“The show of Physics” is a project of the University of Milan that, since 2004, has given birth to seven theatre shows attended by more than 150,000 people. The project aims to awake the curiosity of people (and students in particular) and to give birth to fondness and fascination for physics and physicists, never becoming a lesson. The project has been constantly updating, trying to answer to different emerging needs that have much changed over the years.

Various activities connected to the project have been born for supporting teachers with formal educational tools associated with the shows. We created a formal inquiry-based path on electromagnetic radiation for high-school students. The main topics of the activity concern the electromagnetic spectrum and the matter response to different wavelengths with a focus on visible, UV, near-, and far-infrared. The activity is linked to some informal learning aspects from the scientific theater. Unfortunately, the past year has imposed further changes to our projects due to the pandemic emergency of COVID-19. Laboratories, exhibitions, museums, hands-on activities, and also the theatres have been abruptly closed and the planning of “the show of Physics” had to change consequently. We have therefore modified our laboratory program to make it available remotely, by maintaining an inquiry-based approach, which resulted in a completely new educational tool.

In this talk, I will present and discuss the results of the project “the show of Physics”, and those of the didactic path on electromagnetic radiation, together with the first results obtained with almost 60 students and their teachers.