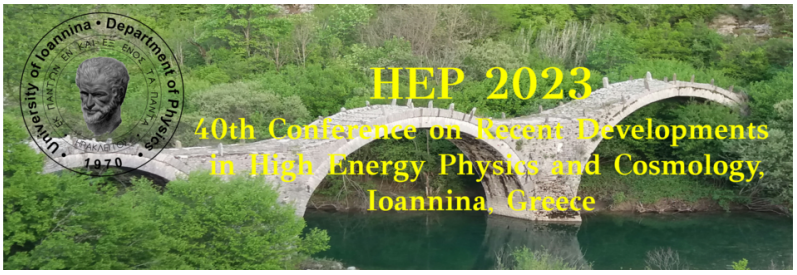

Contribution ID: **68** Type: **not specified**

Search for New Particles at CERN on the Zooniverse citizen-science platform

Wednesday 5 April 2023 17:00 (20 minutes)

The REINFORCE EU project engages and supports citizens to cooperate with researchers and contribute to the development of new knowledge for science and society. REINFORCE offers four "discovery demonstrators" in different areas of physics. The infrastructure of all demonstrators is based on Zooniverse, the most popular citizen-science platform. The demonstrator titled "Search for new particles at CERN"introduces citizen-scientists in searches for new long-lived particles produced in the high-energy proton-proton collisions at the LHC of CERN recorded by the ATLAS experiment. To make this possible, the demonstrator adopts a three-stage architecture. The first two stages use simulated data to train citizens, but also to allow for a quantitative assessment of their performance and comparison with machine-based algorithms. The third stage uses real data from the ATLAS Open-Data subset, providing two research paths: (a) study of Higgs boson decays to two photons and (b) search for yet undiscovered long-lived particles, predicted by certain Beyond-the-Standard-Model theories. Since the launch of the demonstrator on Zooniverse, it has attracted over 3000 volunteers.

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