

Theory and interpretation of multimessenger physics

Wednesday 4 January 2023 16:00 (40 minutes)

Highly relativistic nuclei, known as cosmic rays, bombard the Earth every second. These particles reach energies that go well beyond the ones that can be produced here at Earth, i.e. reaching up to 10^{20} eV in the lab. In this talk, the state of the art of what we can learn from the interaction of these highest-energy particles will be reviewed. The first part of the talk will focus on what information about the cross section we can extract from hadronic interactions in the Earth atmosphere. The second part of the talk will go into the interpretation of the combination of cosmic-ray, neutrino, photon, and gravitational wave data of the Universe, and how these combined signatures help us learn about the origin of cosmic-rays.

Presenter: TJUS, Julia (Chalmers University of Technology)

Session Classification: Invited talks II: Multimessenger landscape