

SUMMER STUDENT LECTURE PROGRAMME 2022

Lecture Title

Astroparticle Physics 2/2

Lecturer's name

Bradley J. Kavanagh

E-mail Address

kavanagh@ifca.unican.es

Short CV

<p>Post-doctoral researcher at Instituto de Fisica de Cantabria (IFCA, UC-CSIC) in Santander, Spain.</p> <p>Former research fellow at GRAPPA Institute, Amsterdam and LPTHE, Paris. PhD in Particle Theory from University of Nottingham, UK (2014).</p> <p>Main research field: astroparticle theory, including direct dark matter searches; primordial black holes; and gravitational wave probes of New Physics.</p> <p>Member of the LISA, LGWA (Gravitational Waves), Athena (X-rays) and CADEX (direct axion searches) collaborations.</p>
--

Lecture Content

<p>These lectures provide an introduction to astroparticle physics. We begin with a brief history, before discussing the various messengers we use to observe the energetic Universe.</p> <p>In Lecture 2, we discuss gravitational waves (GWs) and dark matter. We describe the current status of GW searches and what we've learned from observing a wealth of merging black holes and neutron stars. We then discuss dark matter - an essential but unknown component of the Universe. How can it be detected and what hints do we have about its identity?</p>
--

Pre-requisites:
earlier series of lectures
that the students
should follow

<p>Particle World (David Tong) Introduction to Cosmology (Daniel Baumann)</p>

Other pre-requisites:

<p>None</p>
