

Subject: THAT Seminar - Wed 3 March, 11:00: Camilo Garcia-Cely
From: Paul Morris <paul.morris@desy.de>
Date: 01.03.21, 14:48
To: that@desy.de
CC: "Garcia Cely, Camilo" <camilo.garcia.cely@desy.de>, David Berge <david.berge@desy.de>, "Issever, Cigdem" <cigdem.issever@desy.de>, Christian Stegmann <christian.stegmann@desy.de>

Dear All,

We have our next THAT seminar this **Wednesday (3rd March) at 11:00**. This time, we'll be welcoming Camilo Garcia-Cely from DESY Hamburg to give a talk on:

'The CMB as a detector of gravitational waves'.

You can find the talk abstract and connection details for the meeting below.

Best wishes,
Paul

title: The CMB as a detector of gravitational waves

abstract:

In complete analogy to axion dark matter, gravitational waves are converted into electromagnetic radiation when they propagate in magnetic fields. I will explain how this effect can be used to detect gravitational waves and the consequent synergy between the field of axion-like particles and that of gravitational waves. Next, I will examine gamma-ray observations by the Fermi telescope and HESS that strongly suggest the existence of a non-vanishing cosmic magnetic field. I will then discuss how the latter, together with CMB and 21 cm measurements, currently constrain gravitational wave sources active before reionization. In particular, I will present the resulting bounds arising from the radio telescope EDGES and ARCADE 2. These bounds exceed current laboratory constraints and indicate that future advances in 21 cm astronomy might push these bounds below the Neff constraint on the radiation density present during the CMB formation.

Based on: PhysRevLett.126.021104

Connection Details

Meeting ID: 773 203 834

Hyperlink: <https://zoom.us/j/773203834>

Password: 306155