

12th Iberian Gravitational Waves Meeting



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LISA: Space-based GW Astronomy

Monday 6 June 2022 09:00 (45 minutes)

In 2015, the merger signal from a pair of binary black holes arrived at Earth and was observed by the Advanced LIGO detectors. The signal had travelled for around 1 billion years to arrive at Earth, and its detection marks the beginning of Gravitational Wave astronomy. In recent years and the decade to come, the LIGO, Virgo and Kagra detector network, has made, and will make, many more such detections, opening our ‘ears’ to events in the Universe not visible through electromagnetic detections.

The Laser Interferometer Space Antenna (LISA) is a gravitational wave observatory in space, targeting the millihertz frequency band where a large number of astrophysical and cosmological sources of gravitational waves is expected. In 2013, the European Space Agency selected the science theme ‘The Gravitational Universe’, which focuses on this rich science and in 2016, a call was issued by ESA for missions to address this science, and the LISA Consortium responded to that call with the LISA mission. ESA then selected the proposal in 2017 and the LISA mission began.

This talk will introduce Gravitational Waves and the techniques used to detect them in space. It will review the LISA mission as a whole, highlight the outstanding science that it will deliver. We will also look at the technical aspects of the design, as well as the strong heritage from the LISA Pathfinder mission, all of which gives us a glimpse at the exciting future of Gravitational Wave astronomy.

Which topic best fits your talk?

Presenter: HEWITSON, Martin