

VII Leopoldo García-Colín Mexican Meeting on Mathematical and Experimental Physics



Contribution ID: 27

Type: **not specified**

MIGUEL ALCUBIERRE: Gravitational waves

Friday, 21 February 2020 12:30 (1 hour)

The theory of General relativity was postulated by Albert Einstein at the end of 1915. One of its main predictions was the existence of gravitational waves, that is perturbations of the geometry of space-time that travel at the speed of light, and are produced by violent astrophysical phenomena, such as supernova explosions or the collisions of compact objects. However, gravitational waves are generally so weak that it took over a hundred years to detect them. The first confirmed detection happened in September 2015 at the Laser Interferometer Gravitational Observatory (LIGO), and was identified as the collision of two black holes. The 2017 Nobel Prize was awarded to three scientists for their crucial contribution to the development of LIGO. To date, 10 such detections have been confirmed, and there are over 20 new candidate events. At the end of 2017 the first detection of the collision of two neutron stars was announced, which coincided with a detection of a gamma ray burst, and was subsequently observed in the whole electromagnetic spectrum by many observatories both in space and around the world. In this talk I will give a brief introduction to the concept of gravitational waves, as well as the exciting results related to the first detections and the Nobel Prize.

Session Classification: PLENARY TALKS

Track Classification: SYMPOSIUM ON BLACK HOLES AND GRAVITATIONAL WAVES