

Detection of tensor and scalar gravitational waves by means of interferometric antennas

Monday, 2 October 2017 15:10 (170)

There is presented a new method for the determination of a polarization state of an incoming gravitational wave (GW) by means of a network of three and more working interferometric antennas when the source localisation is known. The recent announcement 1st August 2017 about the start of the new observation run with three interferometric antennas of LIGO-Virgo Collaboration opens a new possibility for the study of the fundamental physics of the gravitational interaction. Modern gravitational theories predict the existence of several polarization states of gravitational waves including scalar and tensor modes, which can be recognised by this method using the difference in beam patterns of interferometric antennas. Therefore, this method distinguishing between polarization modes provides a new test on a theory of gravitation.

Primary author(s) : Ms. FESIK, Liudmila (PhD student)

Presenter(s) : Ms. FESIK, Liudmila (PhD student)

Session Classification : Poster session and coffee&reception

Track Classification : Gravitation and cosmology