

## Gravitational Physics and Astronomy 2022



### Online Conference on Gravitational Physics and Astronomy

4-9 December 2022



<https://indico.cern.ch/e/GPA2022>



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## The detection of gravitational waves new approach

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The gravitational waves appear as wave solution for the Einstein's equations of General Relativity. They were predicted by Einstein in 1916. These ripples of space time are generated by the punctual acceleration of matter in the Universe. The existence of gravitational waves was confirmed by the study of the Binary Pulsar PSR 1913+16 in 1980s. The first experimental discovery was on September 14, 2015, by the collaboration LIGO-Virgo, staging the fusion of two black holes. After a theoretical and historical description of the actual scientific research, we will propose a new detection method that is based on the presence of an electromagnetic field via several examples of applications.

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