



PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik
der Johann Wolfgang Goethe-Universität Frankfurt

Mittwoch, den 1.2.2023, 16 Uhr c.t.
Großer Hörsaal, Raum _0.111,
Max-von-Laue-Str. 1

Antrittsvorlesung

Prof. Dr. Laura Sagunski

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" Gravitational Waves from the Dark Side of the Universe "

The first ever direct detections of gravitational waves from merging black holes and neutron stars by the Laser Interferometer Gravitational-Wave Observatory (LIGO) and the Virgo detector have opened a fundamentally new window into the Universe. Gravitational waves from binary mergers are high-precision tests of orbital dynamics and provide an unprecedented tool to probe fundamental physics. Not only do they allow to test gravity under extreme conditions, but also to address the very fundamental open questions in the evolution of our Universe, namely the mysteries of dark matter and dark energy (or possible modifications of general relativity). In my talk, I will show how we can turn binary mergers into cosmic labs where we can test the very foundations of general relativity and explore the existence of new interactions and particles, like axions, which could be the dark matter.

Die Dozenten der Physik

local host: Prof. Dr. Luciano Rezzolla | rezzolla@itp.uni-frankfurt.de