



Münchner Physik- Kolloquium

sommer
2017

Change of program!

A new window to the universe: direct measurements of gravitational waves

Prof. Dr. Ewald Mueller, *Max-Planck-Institut für Astrophysik, Garching*

Monday, 15 May 2017, 17:15 h

Hörsaal 2, Physik-Department der TUM, Garching

Albert Einstein predicted the existence of gravitational waves in 1916 as a consequence of his General Theory of Relativity. However, it took almost 100 years to confirm this prediction through the first direct measurement of gravitational waves on September 15, 2015. Different from electromagnetic waves, which are oscillations of the electromagnetic field in space and time, gravitational waves are oscillations of the spacetime fabric itself, which propagate with the speed of light and are generated whenever mass-energies undergo aspherical accelerated motion. Measurable signals require very strong gravitational fields and motion close to the speed of light. Both conditions are fulfilled, for example, during the merger of two black holes, or the aspherical collapse of the core of a massive star to a neutron star or black hole.

In the talk, I review the history and mode of operation of gravitational wave detectors, discuss the results of the first successful measurement(s), and present theoretical predictions for the gravitational wave signature of core collapse supernova explosions.

Student event: Meet the speaker

We invite you to a **student-only** discussion-round with Prof. Dr. Ewald Mueller before his Munich Physics Colloquium talk.

Be curious and feel free to ask any question.

Monday, 15 May 2017, 16:00 h

Seminar room PH 3076 (upper floor), Physik-Department der TUM, Garching

