Berliner Physikalisches Kolloquium

100 Jahre Allgemeine Relativitätstheorie

im Magnus-Haus, Am Kupfergraben 7, 10117 Berlin

Eine gemeinsame Veranstaltung der Physikalischen Gesellschaft zu Berlin e.V. (PGzB), der Freien Universität Berlin (FUB), der Humboldt-Universität zu Berlin (HUB), der Technischen Universität Berlin (TUB) und der Universität Potsdam (UP), gefördert durch die Wilhelm und Else Heraeus-Stiftung.

Am Donnerstag, dem **14. Januar 2016, um 18:30 Uhr**

spricht

Prof. Dr. Alessandra Buonanno

Max-Planck-Institut für Gravitationsphysik (Albert-Einstein-Institut), Potsdam-Golm

über das Thema

„Hunting for the elusive waves created by black holes and neutron stars“

Moderation: Jan Plefka (HU Berlin)

In the next five years ground-based interferometers, such as advanced LIGO and Virgo, are likely to provide the first direct detections of gravitational waves. This will constitute a major scientific discovery, as it will permit a new kind of observation of the cosmos, quite different from today's electromagnetic and particle observations. Detecting and interpreting gravitational waves require deep theoretical insights into astronomical sources. In this talk, I will examine advances and future challenges in understanding the dynamics and gravitational-wave emission from compact-object binary systems. I will review the remarkable progress over the last few decades at developing accurate waveform models, so that we can take full advantage of the discovery potential of the detectors, and discuss which astrophysical and fundamental physics information we can extract from gravitational waves emitted by coalescing binary systems composed of black holes and/or neutron stars.