

## GR 3: Gustav-Hertz-Preis

Time: Tuesday 11:00–11:45

Location: HBR 14: HS 2

**Prize Talk**

GR 3.1 Tue 11:00 HBR 14: HS 2

**Enlightening the dark Universe through gravitational waves**— ●DANIELA DONEVA — University of Tübingen, Tübingen, Germany  
— Laureate of the Gustav-Hertz-Prize 2024

We already know that most of the observable Universe appears dark - from the dark energy that governs the expansion of our Universe, through the dark matter in the galaxies, to black holes where space-time curvature reaches extreme values putting to test even Einstein's

theory of gravity. Yet, we can only guess what else awaits to be discovered, whether new fundamental fields exist in nature, or strong gravity needs to be modified in its most extreme regime. Gravitational waves are our long-awaited tool to unveil these mysteries. In the present talk, I will discuss some of the most interesting black hole and neutron star solutions beyond general relativity that allow us to dig deeper into our understanding of fundamental physics, especially through gravitational wave observations.