

Shifting paradigms in Gravitational-wave Astrophysics

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The decade since the first detection of gravitational waves brought about several transformational discoveries. The LIGO and Virgo observatories detected more and heavier black holes than anticipated; the first detection of a neutron star merger through gravitational waves and across the electromagnetic spectrum provided invaluable insights on the production of the heaviest elements in the universe; and a particularly heavy black hole was discovered that could have not come from stellar core collapse. With the exponentially increasing rate of discoveries over the next decade and a half, gravitational waves are all but guaranteed to further shift our astrophysical paradigms. The talk will primarily focus on one of these shifting paradigms: the merger of black holes that was historically considered to be “dark” events producing only gravitational waves, but new observations point towards a brighter, more impactful, multimessenger picture.

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Session Classification: Invited Overview Talks / Hauptvorträge