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News from the dark universe: The discovery of gravitational waves

physikalisches

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In 1916, Albert Einstein predicted the existence of gravitational waves but considered them to be too weak to be ever detected. Nonetheless, 100 years after their prediction, and after 50 years of effort, scientists and engineers have succeeded in this challenge, building multi-kilometer laser interferometers capable of measuring length changes close to the Heisenberg uncertainty limit. The first detections of gravitational waves allow us to listen to the ripples of space-time and witness the merging of black holes more than a billion years ago. Gravitational-wave astronomy has started and, together with electromagnetic and neutrino observations, is expected to shed new light on energetic astrophysical events.

