Seventeenth Marcel Grossmann Meeting



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The mission project THESEUS in the Multi-Messenger Astronomy golden era

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Recent breakthrough discoveries in multi-messenger astronomy include the first identifications of cosmological neutrino and gravitational wave sources. Among these are well-known gamma/X-ray transient sources such as active galactic nuclei and gamma-ray bursts. Several more identifications are expected over the next decade. However, it will only be in the second half of the 2030s that statistically significant samples will become available, thanks to the anticipated one order of magnitude increase in sensitivity of next-generation neutrino and gravitational wave detectors that will be operational by then. By that time, gamma/X-ray surveyors like THESEUS will play a crucial role in detecting and accurately localizing the gamma/X-ray counterparts, enabling multi-band follow-up campaigns and detailed source characterization. In this talk, I will introduce the THESEUS mission concepts and the main achievements expected during this multi-messenger astronomy golden era.

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