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Type: **Invited talk in the parallel session**

NEMO: a dedicated kHz gravitational-wave observatory for neutron star extreme matter

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Gravitational waves from the late inspiral, merger, and post-merger of a binary neutron star coalescence provide complementary information about the cold and hot equations of state of neutron star matter. These signals dominate in the kHz range, higher than the most sensitive part of the current generation of gravitational-wave interferometers. I will present the design concept and science case for NEMO: a gravitational-wave interferometer optimised to study nuclear physics with merging neutron stars. I will discuss the science NEMO can achieve, both in a network of A+-like interferometers, and also with next-generation electromagnetic telescopes. NEMO has the potential not only for ground-breaking science in its own right, but can also act as a technology driver for full-scale third-generation instruments such as Einstein Telescope and Cosmic Explorer.

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Session Classification: Dense Matter in Compact Stars

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