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Environmental noise characterization of cryogenic facilities at CERN and UTokyo

In this talk we present the summary of a set of environmental noise measurements conducted on cryogenic facilities at CERN and at the University of Tokyo. The goal is to assess the impact on the background noise levels of these facilities and to provide valuable information for the design of noise suppression systems in Einstein Telescope. In fact, one of the key features of Einstein Telescope will be the adoption of mirrors at cryogenic temperatures to reduce the contribution of thermal noise. Reduction of thermal noise will be of greatest importance to reach the required ET sensitivity. Despite not representing the scale of the cryogenic facility foreseen for ET, the infrastructures object of our study were useful to make a first assessment of their impact over the background environmental noise and to plan future and more accurate measurement campaigns.

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