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## Gravitational waves and the Einstein Telescope

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Einstein Telescope is the European proposal of a new gravitational wave observatory [1]. The planned sensitivity is over an order of magnitude above the sensitivity of LIGO and Virgo detectors, due to several improvements in the technology, like the larger arms and masses, the cryogenic operation and the underground site. In the presentation I discuss the discovery potential of the instrument and survey the gravitational wave detection technology. The recent status of the planned various gravitational wave detectors is reviewed, too. Then the presentation focuses to the various aspects of site selection process, the challenges of the underground operation and the related Hungarian activity in the Mátra Gravitational and Geophysical Laboratory [2].

[1] <http://www.et-gw.eu>

[2] P. Ván et al., Long term measurements from the Mátra Gravitational and Geophysical Laboratory,  
<https://arxiv.org/abs/1811.05198>

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