

## Second MODE Workshop on Differentiable Programming for Experiment Design



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### The Einstein Telescope project

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The Einstein Telescope (ET) is the future European terrestrial gravitational wave observatory based on laser interferometry. The project is currently in the preparatory phase after its integration in the EU ESFRI roadmap for large research infrastructures in 2021 and the official creation of the scientific Collaboration in 2022. A number of key design innovations are foreseen for ET like underground operation, triangular shape, longer arms and use of a pair of complementary interferometers each optimised in different frequency range. An intense research and development program on ET technology is ongoing. This talk will give an overview of the ET science as well as its design and technology challenges.

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