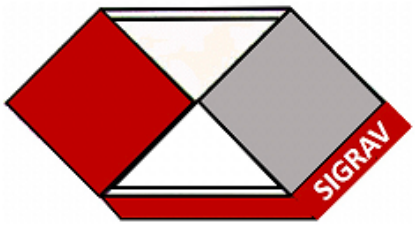

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The Einstein Telescope and its vacuum system

Thursday, September 9, 2021 4:15 PM (30 minutes)

Einstein Telescope is the European third-generation gravitational waves detector.
This new detector will detect GW sources in a Universe volume that is a thousand times bigger compared to the volume surveyed by the present detectors, reaching sources at cosmological distances. The promise, among the others, is to unveil new insight on compact objects like neutron stars and black holes, to study the matter in extreme density conditions, and possibly to study primordial BH and stochastic GW background. Such ambitious scientific goals, require a cryogenic, underground detector 10x bigger than second-generation ones. However, the upscaling in size can be not straightforward. For example, the vacuum system is the biggest volume in ultra-high vacuum ever conceived and his realization will require a huge R&D to find the proper solutions and allow the realization of such gigantic infrastructure. In the talk, we will present the ET project with an emphasis on the vacuum system.

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