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Status of the underground gravitational wave detector KAGRA

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KAGRA is a gravitational wave detector located at Kamioka in Japan. KAGRA has two unique key features compared to the other ground-based gravitational wave detectors: One is constructed at the underground site and the other is utilizing cryogenic sapphire mirrors for the main mirrors. Underground site has a smaller seismic vibration, which is one of the dominant noise sources at low frequency region, than the surface of the ground. Utilizing cryogenic mirrors reduces thermal noise, which is one of fundamental noises of gravitational wave detectors.

KAGRA will start international joint observation with LIGO and Virgo from May 24, 2023 and have a commissioning break to improve the sensitivity. In this presentation, overview and up-to-date status of KAGRA will be reported.

Submitted on behalf of a Collaboration?

Yes

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