

Research Report
ICRR Inter-University Research Program 2020

Research Subject: Noise Evaluation and Reduction of Cryogenic Mirror Suspension System in KAGRA	
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Summary of Research Result: Mirror thermal noise is one of the fundamental noises for room-temperature gravitational-wave detectors in KAGRA. One effective approach for reducing thermal noise is to cool the mirrors. There are many technical challenges that must be overcome to cool the mirrors, such as cryocooler induced vibrations and thermal drift in suspensions. Some members of our group have joined the cryogenic group to learn the details of the experiments in KAGRA site. Last year, due to the COVID-19, most of the cooperation projects are suspended. Now, the digital control system of cryogenic payloads has been applied in Kamioka site. We will continue work on the reduction of real noise of KAGRA cryogenic payload at Kamioka site with KAGRA cryogenics subgroup members. We aim to observe more gravitational wave in later observation.	
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