

Development and installation of the output mode-cleaner for KAGRA

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KAGRA plans to start its first observation in the late 2019. Its sensitivity will be determined by quantum noise and an optical resonator at the output optics chain, a so-called output mode-cleaner (OMC), plays a key role to reduce the quantum noise level. We designed and developed a first model of the OMC, *Mark-I*, and installed it in the ultra-high vacuum system of KAGRA in 2018 (see Fig.1). This poster reports the OMC Mark-I in detail.



Fig.1 Left: assembly of the OMC at Tokyo Tech, Right: Installed OMC in the vacuum chamber.