

GWADW2022 - Approaching the low-frequency design sensitivity of ground-based detectors

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BRDF revisited

Bidirectional Reflectance Distribution Function (BRDF) of LIGO and Virgo test masses quantifies the reflection of mirrors. It is related to the round trip loss (RTL) of the arm cavity and to various stray lights which induce noises in various ways. The available data of BRDF is limited and the RTL cannot be fully calculated by using existing BRDF data. This talk summarizes existing BRDF data of aLIGO, AdVirgo and 40m to characterize the overall view of BRDF and its applications to understand the cavity loss and to quantify stray light induced noises.

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