

Stray light mitigation in KAGRA

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In this presentation, I will review the stray-light mitigation activities for the KAGRA interferometer since its construction began. The stray light, including ghost beams and scattered light generated within the interferometer, is unwanted, as it somehow recombines with the main beam path and eventually becomes noise, which practically limits the interferometer sensitivity. To suppress the noise, optical baffles, dumps, or shields in (or out of) vacuum chambers need to be designed under a good connection with those of mechanical stuff, such as vibration-isolation systems or cryogenic systems, in the very first place, while the seriousness of this fact is not always shared among the relevant subsystems. In addition to simulations, careful engineering is necessary. Summarizing our activities so far would be useful for the detailed design of future interferometers.

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