

Scattered light noise mitigation for the AEI 10m Prototype

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The AEI 10m Prototype will operate a Fabry Perot Michelson interferometer with 10m long arm cavities limited by the standard quantum limit (SQL). It will be a test-bed for testing and developing technologies improving the sensitivity of gravitational wave detectors beyond SQL. In order to achieve SQL-limited sensitivity, we need to suppress all other classical and technical noise sources. Among them, scattered light noise presents a big challenge. In this talk, I present the current work being done towards developing the scattered light noise mitigation strategy by testing and characterizing suitable baffle materials, designing and optimizing baffles, optical simulations of the scattered light in the cavities, and calculation of the scattered light noise budget for the prototype.

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