

Development of a crystalline mirror by transfer of a AlGaAs/GaAs multilayer coating on a silica substrate

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Reducing thermal noise in mirror's coating is one of the main challenge in the noise hunting field within gravitational waves detectors.

Focus has been made on new materials that have better mechanical properties and thus lower thermal noises. I have worked in my PhD thesis work on the development of a Bragg mirror by transferring a AlGaAs/GaAs crystalline coating from a GaAs substrate to a SiO₂ substrate. The experimental work has been conducted with CEA LETI at Grenoble. I will present the main technological issues that we encountered and the key results that we obtained.

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