

The reference solution: a Superattenuator for ET-LF

The Superattenuator is a cornerstone in seismic isolation systems for ground-based interferometers and is indicated as the reference solution for the isolation of the test masses of the Low-Frequency Einstein Telescope. However, the need for an update of the Superattenuator arises not as much from the increased sensitivity requirements, as from the need to suspend a heavier, cryogenic payload, which makes the mechanics more demanding and imposes constraints on the materials, that must be compatible with both vacuum and cryogenic conditions. As seismic isolation system design progresses, evaluating the impact of targeted interventions on the performance of existing solutions is essential.

The upgrade detailed here allows the Superattenuator to meet the more demanding requirements of a third-generation interferometer while preserving its well-established reliability and performance.

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