Contribution ID: **101** Contribution code: **P#33** Type: **Poster**

The Superatenuator for seismic noise suppression of the CAOS Project

Tuesday 7 May 2024 18:02 (1 minute)

The Superatenuator is the mechanical structure conceived to suppress the transmission of seismic noise at the level of the optical components in the Advanced VIRGO laser interferometer. Thanks to the experience acquired in the development and construction of this complex structure, the INFN Pisa group is designing, in collaboration with INFN Perugia group, a filtering system based on the Superatenuator technology. The new generation system is being revised to improve the passive atenuation performance extending the detection band in the low frequency region (around 2-3 Hz) in view of the Einstein Telescope Interferometer. At the University of Perugia the CAOS facility is a very promising experimental site to test a full scale suspension system to validate a new Superatenuator, about 15 m high, as reference solution for ET Interferometer.

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Session Classification: Posters

Track Classification: Instrument Science Board (ISB)