

## An upgraded payload for the CAOS suspended Fabry-Pérot cavity

The CAOS research center (Centro per Applicazioni sulle Onde gravitazionali e la Sismologia) is under construction in Perugia to test seismic attenuation systems for ET and Virgo and perform seismological research. Two 13 m tall attenuators are currently being designed and manufactured, based on the Advanced Virgo Superattenuator concept to support a suspended Fabry-Pérot cavity with 100 kg test masses. With these increased height and suspended mass, the CAOS attenuators represent a step forward in upgrading the AdV Superattenuator to ET requirements.

The height of the devices allows for more spaced Filters along the chain, including longer distances between the Last Filter and the Marionette and, possibly, between the Marionette and the Mirror. This makes the Advanced Virgo actuation cage scheme unsuitable and provides an opportunity to decouple the Last Filter from the forces applied to the Marionette below.

Similarly to other contemporary projects, we propose a Payload design implementing a suspended Reaction Mass from which to drive the Marionette and the Mirror. We present here the new Payload and the expected performance.

**Authors:** BALDICCHI, Nicolo (Università degli studi di Perugia); BALDONI, Samuel (INFN-Perugia); BIANCHI, Francesco; CAPOCCIA, Gabriele (INFN-PG); CHESSA, Piero (Università degli studi di Perugia / INFN-Perugia); FRASCONI, Franco (INFN Pisa); Dr LUCCHESI, Leonardo (INFN Pisa); MAJORANA, Ettore; PERCIBALLI, Maurizio (INFN-Roma)

**Presenter:** CHESSA, Piero (Università degli studi di Perugia / INFN-Perugia)

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