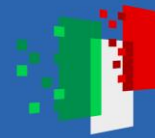




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dall'Unione europea
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Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



CAOS

Test Mass Suspension

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On behalf of the entire Perugia group





What does CAOS need?

COAS is an open field full of opportunities for the test mass suspension:

1: Dummy suspension phase I: aluminum substrate and steel wires

- to tune the super-attenuator (mechanics and controls)
- to learn how to introduce the payload from the side and how to attach it to the SA

2. Dummy suspension phase II: aluminum substrate with a mirror in the middle and steel wires or fused silica fibers (to be decided)

- to lock the optical cavity
- first CAOS commissioning

3. Fused silica suspension: fused silica large mass and fused silica suspension

- to complete the laboratory





What can be tested/developed?

1. Crystalline suspension phase I: aluminum substrate with crystalline inserts and fibers

- to test the suspension assembly procedure and define the necessary tools
- to test the payload joining procedure to the SA
- to define the controls and safety structures/tools

2. Crystalline suspension phase II: complete crystalline suspension???

- Specifications and needs to be defined

3. Any other idea

- CAOS can really be a test place for any new idea and a training point for students and young researchers





Work at ICRR

1. Crystalline suspension phase I: aluminum substrate and marionetta with aluminum wires

- to test the suspension assembly procedure and define the necessary tools
- to test the controls at room temperature and at cryogenic temperature

2. Crystalline suspension phase II: aluminum substrate and marionette with silicon inserts and silicon fibers

- Specifications and needs to be defined





Work at ICRR

3. Crystalline suspension phase III: everything in silicon

- Specifications and needs to be defined

