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The POLIS interferometer for ponderomotive squeezed light generation

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POLIS is a suspended interferometer, presently under construction, devoted to the generation of ponderomotive squeezed light and to the study of the interaction of non classical quantum states, of light, and macroscopic objects. The interferometer is a Michelson whose half-meter long arms are constituted by high-finesse cavities, suspended to a seismic isolation chain similar to the Virgo SuperAttenuator.

The mass of the suspended cavity mirrors are chosen to be tens of grams: this value is sufficiently high to permit the use of the well tested Virgo suspension techniques but also sufficiently small to generate the coupling among the two phase quadratures with a limited amount of light in the cavity, of the order of few tens of kW.

In the poster the main features of the interferometer are shown, together with the expected sensitivity and squeezing factor.

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