## High-Frequency Analysis of Diffraction from Baffles within the Tubes of Interferometric Gravitational Wave Detectors

Absorbing baffles and irises are used to suppress stray light in the arm pipes of long baseline optical interferometric detectors of gravitational waves like LIGO and Virgo, due to the finite size of the mirrors etc. Baffle themselves, however, can be sources of diffracted light, and hence noise. Here we analyze diffraction from baffles using a uniform version of the geometrical thery of diffraction, and expand the scattered cavity fields in terms of Gauss-Laguerre modes, for different baffle geometries.

**Authors:** Prof. SELLERI, Stefano (DINFO, University of Florence); Prof. PELOSI, Giuseppe (DINFO, University of Florence); Prof. PINTO, Innocenzo M. (University of Sannio at Benevento, INFN, LVC and KAGRA); Dr POSSENTI, Leonardo (DINFO, University of Florence)

Presenter: Prof. SELLERI, Stefano (DINFO, University of Florence)

Session Classification: Poster session