Contribution ID: **9** Type: **Poster**

Beam characterization with the phase cameras in Advanced Virgo

Tuesday, 7 June 2022 10:50 (5 minutes)

Wavefront sensing allows for probing mode mismatch, higher order modes and thermal effects in gravitational-wave interferometers, all of which need to be well controlled as they impact the interferometer's stability and sensitivity. The phase cameras installed at Advanced Virgo (AdV) are capable of generating amplitude and phase images of the laser beam wavefront at any beat frequency of interest. The ability to extract independently carrier and upper and lower sidebands provides a rich dynamical dataset which remains largely untapped. We will show results of beam characterization with the phase camera and initial studies of the phase information at AdV. Understanding the phase information can be crucial to improve higher mode content analysis and possibly in monitoring thermal effects.

Additionally, we will present the plans and design of a table-top experiment being set-up at UCLouvain in order to study the use of the phase camera to generate error signals for automatic mode matching control of a coupled cavity. This know-how could, in the future, be directly applied at AdV where phase cameras are already installed.

Primary author: CABRITA, Ricardo (UCLouvain)

Presenter: CABRITA, Ricardo (UCLouvain)

Session Classification: Poster session

Track Classification: Wavefront sensing and control