Contribution ID: **75** Type: **Talk**

Study of substrate and coating birefringence

At the Department of Physics and Earth Sciences at the University of Ferrara we have a sensitive polarimeter for birefringence measurements of both substrates and coatings. In the configuration for substrate measurements the polarimeter is based on two co-rotating half-wave plates with the sample between them. The induced time dependent ellipticity signal is then extracted using a heterodyne technique. A simple modification of the transmission scheme is implemented during reflection measurements. The sample can be scanned in 2D to extract birefringence maps both in transmission and in reflection. The sensitivity in optical path difference is
$lesssim 10^{-12}$ m. Results for different silicon samples (for substrates) with crystal orientations 110 and 100 will be shown along with coatings measurements.

Primary authors: DELLA VALLE, Federico; MAILLIET, Max Aurelie; MALAGUTTI, Lorenzo (INFN - Ferrara, Ferrara, Italy); MARIOTTI, Emilio (DSFTA, Università di Siena and INFN - Pisa); MAZZOLARI, Andrea (University of Ferrara and INFN - Ferrara, Ferrara, Italy); ROMAGNONI, Marco (University of Ferrara and INFN - Ferrara, Ferrara, Italy); ZAVATTINI, Guido (University and INFN - Ferrara)

Presenter: ZAVATTINI, Guido (University and INFN - Ferrara)

Track Classification: Instrument Science (ISB): Optics