WP5: Large format liquid-crystal modulators

Description

Work package number	WP5	Lead beneficiary	8 - CSIC
Work package title	Large format liquid-crystal modulators		
Start month	1	End month	36

Objectives

- Construction and testing of large format liquid crystal variable retarders

Description of work and role of partners

WP5 - Large format liquid-crystal modulators [Months: 1-36] (CSIC, IAC, MPG, INTA, ARCOPTIX SA)

Fabrication and testing of large format LCVRs:

The advantages of employing these devices are many. Their easy driving with low-voltage electric signals avoids the use of traditional rotating waveplates (using motors), hence enabling stable optical paths with low power consumption and no mechanical noise in the systems. They also have quick response times that are very useful for fast modulation of the polarization state of light. Their low weight makes them ideal for space applications as well. In addition, very good polarimetric efficiencies can be achieved with LCVR-based polarimeters. The tasks to be undertaken in this WP are:

- Definition of requirements and test procedures
  - Birefringence and type of the different LCs for the various wavelengths. Thickness
  - Homogeneity and optical quality
  - Fixed retardances and variable angles for the F-LCVRs
  - Thickness homogeneity
  - Necessary number of samples per wavelength and LC type
  - Laboratory setup material
  - Test procedures and protocols. Acceptance and disproval criteria
- Test of samples
  - Wavefront errors
  - Polarimetric behaviour
  - Chromaticity

Documentation

At the footer of this page you can find next documentation of this workpackage:

- OT EST IAA.pdf: "New generation LCVRs for astronomical polarimetry" Technical brochure.

Files

OT EST IAA.pdf	1.39 MB	2018-01-09	GREST EST