

High-speed imaging polarimetry using liquid crystal modulators

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Abstract. This paper deals with dynamic polarimetric imaging techniques. The basics of modern polarimetry have been known for one and a half century, but no practical high-speed implementation providing the full polarization information is currently available. Various methods are reviewed which prove to be a trade-off between the complexity of the optical set-up and the amount of polarimetric information they provide (ie the number of components of the Stokes vector). Techniques using liquid crystal devices, incepted in the late 1990's, are emphasized. Optical set-ups we implemented are presented. We particularly focus on high-speed techniques (i.e. faster than 200 Hz) using ferroelectric liquid crystal devices.