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Polarimetry: theory and application in astronomy

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Abstract. In this talk I will review the basic properties of polarized light and introduce the Stokes vector. I will give some examples of astrophysical sources that show high polarization degree of their radiation especially in the optical range of the electromagnetic spectrum. I will also briefly describe mechanisms of polarization origins as well as methods to derive its properties. I will show some examples of working polarimeters at 1-2 meter class telescopes. Additionally, I will present some scientific results obtained from photopolarimetric, as well as spectropolarimetric observations.