

IRSOL: spectropolarimetry in solar flares

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Spectropolarimetry has still much to offer in the study of solar flares, this is a possibility we are addressing with our IRSOL flare observation program. Specifically, we are running spectropolarimetric observations whose range includes the He I D3 5876 Å line, using the slit-spectrograph setup and occasionally the Fabry-Pérot.

Thanks to the high precision provided by the ZIMPOL polarimeter, we were able to clearly detect linear polarization in the He I D3 line during a solar flare event. Our analysis strongly suggests that this polarization originates from anisotropy in the radiation field. Although not yet observed, we think that He I D3 line could be used for the investigation of flare-accelerated particles and their impact in the lower atmosphere.