Advancing high-precision spectropolarimetry with the installation of ZIMPOL at GREGOR: current status and future plans

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Solar spectropolarimetric observations play a crucial role in diagnosing magnetic fields throughout the solar atmosphere as well as detecting anisotropies in radiation fields and collisional processes. igh sensitivity polarimetric observations enable the study of faint polarization signals, particularly those arising from scattering processes in both the quiet Sun and active regions, including ares. The urich maging olarimeter ( ) represents a state-of-the-art instrument that minimizes seeing-induced spurious eects, which usually limit polarimetric precision, through its fast modulation capabilities (up to k z). This design allows to achieve a precision of 10 in fractional polarization units.
Following the optical optimization of the E telescope in Tenerife, the aim is to investigate small-scale structures by studying solar magnetism through high-precision polarimetric observations using at the largest European solar telescope. n addition, we aim to continue oering the system to a broader community and implement a remote observing mode with . Several observing campaigns have been carried out successfully, and more are planned, particularly in preparation for the installation of the system at E , complementing existing instruments to explore the visible part of the solar spectrum. This poster presents the current status and future plans of the at E pro ect.