

**Abstract for S17 : L'interféromètre NOEMA et le télescope de 30m de l'IRAM:
développements récents et futurs**

Title : Line polarimetry at the 30m with Xpol: variability of the magnetic field around the evolved star U Her

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Evolved cool stars, exhibit a important mass loss rate, that enriches the interstellar medium and, therefore, and participates in the cycle of matter in the Universe. The role of magnetic field within these mass loss phenomena is not fully understood but can be constrained thanks to observations of various molecular transitions in the circumstellar envelope (CSE) of the star. We observed the SiO maser line emission from an AGB star, U Herculis, to detect the magnetic field in the inner gas region of the envelope, up to 2-4 stellar radii from the photosphere. Using the Xpol instrument at the IRAM-30m telescope we can measure the Stokes I, Q, U and V signals. U Her has been the subject of monitoring. The goal is to monitor the variation of the magnetic field on a monthly basis. We present positive detection and successful monitoring over one full year (= 1 pulsation period of the AGB star). A variation of the magnetic field strength is clearly detected over one year of observations. We question the origin of this field, possibly connected to the stellar pulsations, a dynamo or the presence of a companion. I will present the variations of the magnetic field around AGB stars and how the IRAM facilities (30m and NOEMA) could help us to better understand the origin of the detected magnetic field.