

VLBI astrometry of radio stars

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A fraction of the nearby M dwarfs have detectable radio emission, which can be driven by several emission mechanisms. By observing the polarization, position and temporal behavior of this emission, we want to characterize it, and understand what mechanism is active in these radio stars.

We make use of the high astrometric accuracy and sensitivity available through the European VLBI Network. To further improve the astrometric accuracy, we make use of techniques such as MultiView and in-beam phase calibrators. After taking the effects of proper motion and parallax into account, we aim to achieve an astrometric accuracy that is comparable to that of the Gaia mission. This allows us to see whether the radio emission is offset from the optical position, or perhaps extended. We can also detect reflex motion due to binary or planetary companions.

In this contribution, we'll showcase the latest results of this project on several nearby M dwarfs.

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