
CALYPSO: the IRAM-PdBI survey to solve the angular momentum problem at the Class 0 stage

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Résumé

The CALYPSO survey of Class 0 protostars, conducted with the IRAM Plateau de Bure interferometer between 2010 and 2013, is a comprehensive observational and theoretical effort dedicated to solve the angular momentum in low-mass star formation. The IRAM PdBI dataset provides us with high dynamic range observations of various tracers at increased spatial resolutions, therefore allowing to put strong constraints on angular momentum conservation and removal mechanisms during the main accretion phase.

We will present the first detailed study of the CALYPSO data towards the NGC1333-IRAS2A protostar, showing that molecular and dust continuum emission maps allow to draw a detailed picture of the kinematics, chemistry and ejection processes at work at scales ~ 50 -5000 AU (Maret et al. sub., Maury et al. sub., Codella et al. sub.).

The preliminary statistical analysis of the CALYPSO maps towards the full sample of 17 Class 0 protostars will be shown, with a particular emphasis on the information relevant to our understanding of the formation of both circumstellar disks and multiple systems. Finally, we will discuss possible follow-up ALMA and NOEMA projects, tailored to address the new questions raised by the CALYPSO observations.

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