

## **The accretion-ejection connection in Young Solar type stars**

C. Dougados<sup>1</sup>, J. Bouvier<sup>1</sup>, S. Cabrit<sup>2</sup>, S. Alencar<sup>3</sup>

<sup>1</sup> *Univ. Grenoble Alpes, CNRS, IPAG, 38000 Grenoble, France*

<sup>2</sup> *LERMA, Observatoire de Paris, Paris, France*

<sup>3</sup> *Departamento de Física, ICEx, UFMG., Belo Horizonte, Brazil*

One of the crucial open question in star formation is to understand the link between the accretion of matter onto the young star and the launching of large scale supersonic jets/outflows. In both cases, the magnetic field is thought to play a crucial role. In young convective solar type stars, the strong stellar magnetic field directs the flow of matter from the inner accretion disk onto the star. This magnetospheric accretion scenario best explains the photometric and spectral variability observed in these young stars. I will first review most recent advances brought on this topic by coordinated synoptic observations performed in particular with the COROT and K2 spatial telescopes. On the other hand, magnetic ejection models also currently best explain the strong correlation between accretion and ejection processes observed in forming stars. However, the role played by the jets and outflows in the extraction of mass and angular momentum from the protoplanetary disk and in its evolution are still critical open issues. I will review in this talk most recent observations of the launching regions of jets and outflows, from the X-ray to the millimetric domain, and discuss their implications for both launching models and disk evolution. I will particularly insist on the remaining puzzles and discuss the potential of new instruments, like ALMA, to progress on these issues.