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Modeling the accretion on Young Stars : recent results and perspectives

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Many questions still remain open on the stellar accretion process which occurs during the first phases of the life of young stars and consequently the details in the exchange of mass and momentum between the proto-star and its accretion disk still remain approximate: the topology of the accretion flow, its temperature, its observability in the UV and X-ray bands, the possibility of any periodicity, if and how accretion affects the coronal activity of the proto-star, etc.
In this talk, I will focus on 1D simulations of accretion columns falling onto a dynamically heated stellar chromosphere. I will present first the method used for the radiative hydrodynamics and the importance of the underlying opacities. Then, I will describe two phenomena that have been studied in this work: the mutual feedback between a dynamically heated chromosphere and the accretion process and the coupling between radiation and matter. Perspectives will finally be presented.

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Contribution

Talk

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