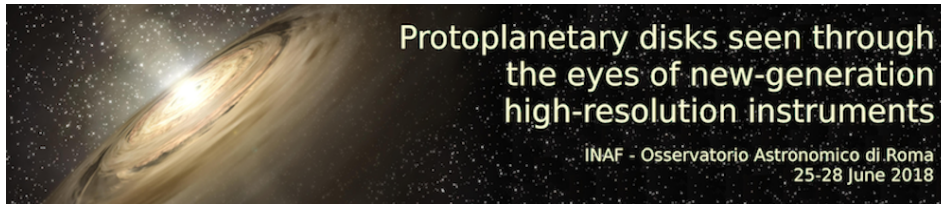


## Protoplanetary disks



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# Evolution of early Protoplanetary systems embedded in gaseous disks under perturbation of passing-by stars.

*Thursday, 28 June 2018 12:20 (20 minutes)*

The recent detection of planetary systems around stars embedded in Open Clusters opened new perspectives on the study of the primordial evolution of gas matter and on the subsequent formation of planets. In such complex environments, the disks may interact with the other cluster field-stars, and follow a different evolution with respect to the well-known simpler case of isolated systems. For such purposes, a new SPH tree-based algorithm has been developed, which takes into account the coupled dynamical evolution of stars and planets in their circumstellar gaseous disk. Our first parametric modelization focuses on the evolution of young protoplanetary systems perturbed by passing-by stars.

In particular, we aim to the understanding of the evolution of the primordial Solar System which, according to recent models, is thought to be born in an Open Cluster.

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