



## Comparaison des simulations numériques et des observations de disques protoplanétaires

**Spécialité** Astrophysique

**Niveau d'étude** Bac+5

**Formation** Master 2

**Unité d'accueil** [DAP/LMPA](#)

**Candidature avant le** 07/04/2021

**Durée** 4 mois

**Poursuite possible en thèse** oui

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### Résumé

### Sujet détaillé

The Sun formed in a stellar cluster environment and the protoplanetary disk out of which the Earth and the other planet formed was influenced by the radiation field and dynamical interaction from other forming stars in the cluster. So far, most of our understanding of the evolution of protoplanetary disks and planet formation is based on theory and observations of isolated objects. The aim of this project is instead to start from state of the art numerical simulations of disk populations in clusters and using available tools predict observable properties in submillimetre bands and compare these with available ALMA observations. The candidate will carry out this research as part of the European Research Council ECOGAL project aiming at understanding star and planet formation in the Galactic ecosystem. The project may lead to ERC-funded Doctoral project focused on comparing observations of the properties of protoplanetary disk populations in the Galaxy with library of state of the art numerical simulations carried out by the ECOGAL groups at AIM.

### Mots clés

simulations numériques -- transfert de rayonnement

### Compétences

simulations numériques -- transfert de rayonnement

### Logiciels

python fortran

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## Comparing numerical simulations and observations of early planet-forming disks

### Summary

### Full description

The Sun formed in a stellar cluster environment and the protoplanetary disk out of which the Earth and the other planet formed was influenced by the radiation field and dynamical interaction from other forming stars in the cluster. So far, most of our understanding of the evolution of protoplanetary disks and planet formation is based on theory and observations of isolated objects. The aim of this project is instead to start from state of the art numerical simulations of disk populations in clusters and using available tools predict observable properties in submillimetre bands and compare these with available ALMA observations. The candidate will carry out this research as part of the European Research Council ECOGAL project aiming at understanding star and planet formation in the Galactic ecosystem. The project may lead to ERC-funded Doctoral project focused on comparing observations of the properties of protoplanetary disk populations in the Galaxy with library of state of the art numerical simulations carried out by the ECOGAL groups at AIM.

### Keywords

numerical simulation - radiative transfer

### Skills

numerical simulation - radiative transfer

### Softwares

python fortran