

Spécialité de Master « Optique, Matière, Plasmas »

Stage de recherche (4 mois minimum, à partir de début mars 2010)

Proposition de stage pour l'année 2009-2010 (ne pas dépasser 1 page)

Date de la proposition :

Responsable du stage / internship supervisor:			
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Lieu du stage / internship place: Ecole Normale Supérieure de Lyon			

Titre du stage / internship title: **Formation d'étoiles et fonction de masse initiale**

Résumé / summary

La formation d'étoiles, en particulier dans l'univers local, reste un des problèmes clés de l'astrophysique. Elle détermine la fonction de masse initiale (IMF) stellaire, nombre d'étoiles par intervalle de masse, et de là l'évolution chimique, baryonique et photonique non seulement de notre environnement local (Galaxie), mais de l'univers, à travers la formation des galaxies. Les observations montrent que la formation d'étoiles est très rapide et est gouvernée essentiellement par la turbulence. La modélisation de cette physique est déterminante pour la compréhension du processus de refroidissement et donc l'effondrement du nuage moléculaire.

Par ailleurs l'IMF peut être considérée comme une densité de probabilité, ainsi que le taux de formation d'étoiles (nombre d'étoiles par intervalle de temps). Donc une IMF et un taux donnés conduisent à une distribution d'étoiles fixée. Or cette distribution peut être observée dans les régions de formation d'étoiles et dans les amas stellaires jeunes. La confrontation entre ces observations et les calculs théoriques permet de vérifier le degré de validité de l'IMF.

Le but du stage est (1) de développer un calcul analytique de l'IMF, basé sur les propriétés de la turbulence et la physique statistique, similaire au formalisme dit de Press-Schechter utilisé en cosmologie pour la fonction de masse des halos sombres primordiaux, en s'appuyant sur des calculs déjà effectués dans notre groupe, (2) de vérifier avec des simulations Monte Carlo la validité de l'IMF calculée, en la comparant aux observations d'amas stellaires.

Toutes les rubriques ci-dessous doivent obligatoirement être remplies

Ce stage pourra-t-il se prolonger en thèse ? Possibility of a PhD ? : Oui			
Si oui, financement de thèse envisagé/ financial support for the PhD:			
Bourse ministère			
Lasers et matière	X	Lumière, Matière : Mesures Extrêmes	X
Optique de la science à la technologie		Physique des plasmas	X

Fiche à transmettre (fichier pdf **obligatoirement**) sur le site <http://stages.master-omp.fr>

the 1990s, the number of people in the UK who are employed in the public sector has increased from 10.5 million to 12.5 million, and the number of people in the public sector who are employed in health care has increased from 2.5 million to 3.5 million (Department of Health 2000).

There are a number of reasons for this increase. One of the main reasons is the increasing demand for health care services. The population of the UK is ageing, and there is a growing number of people with chronic conditions such as heart disease, diabetes, and asthma. This has led to an increase in the number of people who need to be treated in hospitals and other health care settings.

Another reason for the increase is the growing emphasis on prevention and early intervention. This has led to an increase in the number of people who are employed in primary care settings such as general practices and community health centres. There is also a growing emphasis on the role of health care workers in promoting health and preventing disease.

Finally, there is a growing emphasis on the role of health care workers in providing social care services. This has led to an increase in the number of people who are employed in social care settings such as care homes and residential care facilities. There is also a growing emphasis on the role of health care workers in providing mental health services.

The increase in the number of people employed in the public sector has led to a number of challenges. One of the main challenges is the need to recruit and retain staff. There is a shortage of people who are qualified to work in health care, and many people who are qualified are leaving the profession. This is due to a number of factors, including the low pay and the long hours that are often required.

Another challenge is the need to improve the quality of care. There is a growing emphasis on the need to provide high-quality care, and this has led to a number of initiatives to improve the quality of care. These include the introduction of clinical guidelines and the implementation of quality improvement programmes.

Finally, there is a need to improve the efficiency of the public sector. There is a growing emphasis on the need to reduce costs and improve the efficiency of the public sector. This has led to a number of initiatives to improve the efficiency of the public sector, including the introduction of performance targets and the implementation of cost reduction programmes.

In conclusion, the number of people employed in the public sector has increased significantly in the 1990s. This is due to a number of factors, including the increasing demand for health care services, the growing emphasis on prevention and early intervention, and the growing emphasis on the role of health care workers in providing social care services. There are a number of challenges associated with this increase, including the need to recruit and retain staff, the need to improve the quality of care, and the need to improve the efficiency of the public sector.