



LABORATOIRE DE PHYSIQUE THÉORIQUE ET MODÈLES STATISTIQUES  
CNRS & UNIVERSITÉ PARIS-SUD – ORSAY – FRANCE



## Postdoctoral position available

We welcome applications for a postdoctoral position on the **modeling of passive and active cytoskeletal networks**. The focus of the project will be on branched actin networks, which actively push against obstacles by growing with a fractal morphology to help the living cell move and deform. Current theories of fiber network elasticity predict that such networks should be very soft due to their low connectivity, in blatant contradiction with experimental observations. The successful candidate will implement numerical simulations of the mechanics of these networks taking into account the interactions between branches, which we predict will significantly rigidify the network by creating self-similar entanglement patterns. After elucidating the passive dynamics of these networks, the project will move on to considering the mechanisms by which they actively exert forces on their surroundings, as well as the feedback of the surroundings on the network structure.

The postdoc will work between the groups of **Martin Lenz**, which specializes in cytoskeletal mechanics and will develop analytical models paralleling the simulations, and **Giuseppe Foffi**, which will provide the expertise in soft matter numerical simulations. The project will be conducted in **close collaboration with the experimental group** of Olivia du Roure and Julien Heuvingh at ESPCI, which uses a pioneering new experimental setup to probe the passive and active mechanics of branched actin networks. More details at

[www.lptms.u-psud.fr/membres/mlenz/research](http://www.lptms.u-psud.fr/membres/mlenz/research)

**Autonomous interactions with experimentalists** and the **development of creative independent projects** are encouraged. Teaching and outreach opportunities will also be provided.

The gross salary for the position ranges between 2600 €/month and 3600 €/month depending on experience. Funding is available for at least **two years of employment**. The work is to be conducted at LPTMS, a joint laboratory of CNRS and Université Paris-Sud with a markedly international atmosphere. Located in Orsay, it is **25 minutes away from central Paris via a frequent, direct commuter train**. Benefits include free full healthcare coverage for the postdoc and his or her dependents, generous vacations, 16-weeks fully-paid maternity leaves, free schooling from age 3 and subsidized child care for younger children. CNRS additionally subsidizes vacations, sports and cultural activities for its employees.

The position will begin at a **flexible date** in 2017, although a start in the first half of the year will be preferred. The successful candidate will have strong background in advanced numerical simulations of soft matter system, preferably involving polymers or elastic networks, as well as a demonstrated ability to conduct independent, creative research. She or he will be able to interact with physicists with different backgrounds and function as part of multidisciplinary team. Applications will comprise the names of three references, an application letter, a CV and a publications list including preprints. Informal inquiries welcome.

### Contact:

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