

## **INTERNSHIP PROPOSAL**

*(One page maximum)*

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CNRS identification code: **UMR 8023**  
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Internship location:

Thesis possibility after internship: **YES**  
Funding: **POSSIBLE** If YES, which type of funding: **ANR**

### **Phase transitions in Turbulence**

Two dimensional turbulence has the magnificent property to self organize in large structures unlike three dimensional turbulence that leads to disorganization. When strongly anisotropic flows are considered the flow has a hybrid behavior that is not yet understood. Varying the anisotropy turbulence displays phase transitions from a self-organizing state to disorganized state. The present project is going to investigate such phase transitions at different limits in order to understand the flow behavior close to the critical points. The work will be based on numerical simulations of the Navier-Stokes equations and the use of simplified theoretical models.

Please, indicate which speciality(ies) seem(s) to be more adapted to the subject:

Condensed Matter Physics: **YES**      Soft Matter and Biological Physics: **YES**  
Quantum Physics: **NO**                      Theoretical Physics: **YES**