

Postdoc position
Mean Field Games for Traffic flow

Applications are invited for 1 postdoctoral positions in the department of Mathematics, INSA Rouen Normandy. The position is available for 12 months, assuming the successful candidates take up post on or before October 1st 2020.

Host institution and place of work

The successful candidate will be co-supervised Prof. Nicolas FORCADEL (LMI, INSA Rouen Normandy, nicolas.forcadel@insa-rouen.fr) and Michaël SAVARY (Cerema Normandie-Centre, michael.savary@cerema.fr). He will become a member of the LMI laboratory at INSA Normandy, Rouen, with frequent visits to the CEREMA. The work will be carried out in a stimulating and international environment involving collaboration and interaction with important experts in the field.

Scientific program

Context and motivations Traffic flow modelling is a challenging task and has known important evolution in the past few years. The modelling team of CEREMA Normandie Centre has developed in 2010 a model for the displacement in the perimeter of Rouen Métropole. This is a macroscopic model with four steps:

- Generation of the displacement
- Distribution of the displacement
- Modal choice
- Affectation

Goals In the framework of the regional project M2SINUM, the goal of this postdoc will be to propose and implement a mean field game model to improve the step of affectation of traffics. This will allow in particular to study the effect of a strong demand on an adjacent road in order to take into account the cascading effects of circulation difficulties.

Required background and skills

The ideal candidate will be an enthusiastic and creative individual with a Ph.D. in Mathematics (in e.g., PDE's, variational and non-smooth analysis, numerical analysis of PDE's), or a related field, and a strong track record as evidenced by high quality publications, etc.. The candidate should also show good programming skills, and good communication skills in English, both written and oral.

All applicants must send a CV (including publication list) and a research statement to:
nicolas.forcadel@insa-rouen.fr