A 1 year post-doctoral (ADVANCED RESEARCH) position

in Mathematics and Computation in the area of Networks, Nonlinear and Complex Systems is available from October 1, 2012 at the ISCN (Complex Systems Institute, LMAH-LITIS laboratories, in Normandy, France)

This position aims to recruit a senior researcher (not beginners young doctors)

for collaboration with Prof. M. Aziz-Alaoui (ISCN/LMAH) and Prof. Cyrille Bertelle (ISCN/LITIS)

Funding

Main research areas

This position is open to conduct multidisciplinary research on various scientific areas such as:

* complex networks
* dynamical graphs
* dynamical processes on complex networks
* morphogenesis of complex networks
* non-linear dynamics
* computational mathematics
* applied mathematics

Subject

The primary goal of the ISCN (the research Institute of Complex Systems of Normandy) at University of Le Havre (Normandy, France) is to foster research activity that highlights scientific computation as a complementary avenue to theory and experiment. More about ISCN can be found at http://isc-n.fr/

We consider complex systems as systems of interacting elements. From these interactions can emerge some properties which cannot be deduced from the conventional analysis of its components. Our objective is not only to analyse and control complex networks belonging to such complex systems, but also to work on the reconstruction of the system complexity.

In this context, the study of complex systems in terms of interaction networks are of main interest.
The aim of this post-doctoral position is to study complex network dynamics according to their structural or morphological properties. Theoretical results are expected and numerical implementations will be achieved.

As an example, networks composed of dynamical systems (non-linear ODE, PDE, DDE) connected through coupling functions can be considered. Indeed, some work on this kind of networks has already been performed within the LMAH and LITIS. We mainly focus on how does the dynamics of individuals have implications on the network global behaviour and on how does the network motion modify the entities behaviours. These questions will be also treated in terms of topology, dynamics, morphogenesis ...

Based on the study of some interaction networks modelling biological problems or ecosystems, the idea is to contribute to the mathematical formalization of the notion of "complexity".
The candidate will contribute to the overall research efforts of ISCN and of both the LMAH Laboratory and the LITIS Laboratory, working hand in hand on the formalization of complexity notion.

We are looking for enthusiastic candidates with a research background in applied mathematics, complex systems, networks, non-linear dynamics and computation ...

Eligibility

 - The candidate must be a Ph.D. in applied mathematics and computation, enable to demonstrate a strong foundation in networks modeling, non-linear dynamics and computation, ...
 - at least five years of research and/or post-doctoral academic or industrial experience
 - at least 6 months of research in a country different from yours
- no nationality condition

Recruitment process

- Eligibility check: ISCN ensures that each applicant fulfils the registration conditions
- File selection: an assessment commission reviews applicant files and draws up a shortlist for possible interviews
- Interviews: pre-selected applicants may be interviewed. After deliberation, the committee draws up a shortlist
- Acceptance results: the offers are made according to the ranking.

Useful Information

- The annual salary will be around 29 000 € (net pay, without charge, around 2400 euros monthly, ~USD 3000).

- A limited budget will also be available for supporting this project (participation to conferences, …).

- **To apply**, please submit a resume, a publications list, at least 2 recommendation letters and a cover letter outlining current research interests, by e-mail to :

aziz.alaoui@univ-lehavre.fr

precising in the "subject" of the email that you apply for this advanced research position.

- **Deadline** for applications: september 10, 2012.

- Position available from October 1, 2012.

Interested candidates are welcome to contact us to discuss the position and the project.

For more information, send an email to:
aziz.alaoui@univ-lehavre.fr   (or aziz.alaoui1@gmail.com)
or
cyrille.bertelle@univ-lehavre.fr   (or cyrille.bertelle@gmail.com)

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