Postdoc position

Numerical identification of the acoustic signal emitted by intermittent crack propagation using the phase-field method

LaMCoS (Contact and Structure Mechanics Laboratory) is a joint laboratory of the CNRS and the INSA of Lyon. Our aim is to understand and control the mechanical behavior of structures and moving systems. The researches at LaMCoS use various experimental and simulation techniques to solve academic and industrial challenges.

Context

The project aims to understand the source of the acoustic waves emitted by fatigue crack propagation in metals and polymers. LaMCoS offers a full-time postdoctoral position for a motivated researcher with a Ph.D. in material science or engineering. The successful candidate will develop a new acoustic source model with the phase-field method in a finite element framework.

Job description

The position is focused on material model development and dynamic fracture simulations in brittle materials. The aim is to develop and validate a new source model for the acoustic emission experiments. Additionally to the numerical context, the researcher will regularly interact with the experimental team in Nantes, where the modelled phenomenon will be recorded with an ultra-high-speed camera.

Required skills

- Advanced level of understanding in computational fracture mechanics and the finite element method.
- Experience with the phase-field method in fracture.
- Adequate experience in computer programming, preferably in FORTRAN and Python.
- Fluent in English.

Experience in the following areas is a plus:

- Basic understanding of acoustic emission measurements.
- Knowledge about the mechanics of fatigue crack propagation.
- Experience in ABAQUS.
- Basic conversation skills in French, or strong willingness to learn the language.

Timing

Starting date in the second half of 2021. Duration: 12 months.

Location

Campus LyonTech-la Doua, Villeurbanne, Lyon (FR). Regular missions to Nantes (FR) to interact with the experimental team at GeM (EC Nantes).

Contacts

To apply send your application including a CV with a list of publications and amotivation letter by email with the subject line: "PostDoc e-WARNINGS" to:

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