



DESIGN AND MODELING OF INNOVATIVE MATERIALS



1-year Postdoc offer

Defining periodic R.E.V for nonlinear matrix filled with monodispersed particles

The objective is to define the constraints that define representative elementary volumes (R.E.V) for a nonlinear matrix filled with monodispersed spherical particles or voids with low or high volume fractions of fillers or voids, within the context of periodic boundary conditions. Such work will help defining the necessary tools for the simulations of a large range of materials.

The candidate will generate cells, characterize their geometry, and will run F.E. simulations on Abaqus finite element code that is set on the lab cluster allowing to run relatively large calculations. He/She will benefit from the tools developed during two PhDs that were limited to the context of linear elasticity.

The candidate will work full time at LMS, laboratoire de Mécanique des Solides, in Ecole Polytechnique, IP Paris. He/She will be advised by Julie Diani (julie.diani@polytechnique.edu) and Kostas Danas. She/He will benefit from a dynamic lab environment which will expose him to many topics on materials and mechanical engineering thanks to weekly seminars. Some experience in numerical modelling of materials and Abaqus F.E. code are required.

The postdoc can start as early as September 2021.

If interested by the position, contact Julie DIANI julie.diani@polytechnique.edu.

This postdoc position is supported by the Industrial chair *Design and modeling of innovative materials* between Arkema and Ecole Polytechnique, IP Pars.