

Post-doctoral position

Contact:

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Location: LTDS at Ecole Centrale de Lyon

Duration: 12 months from 1st September 2014

DEM modelling of the 3D failure of dry stone retaining walls

The work that will be undertaken is part of the collaborative project "Materials for sustainable construction" IDEX-ANR-University of Lyon.

Extensive works have been done in the LTDS to understand and predict the behaviour of dry stone retaining walls. First, the modelling of the failure of dry stone retaining walls due to an excessive action of a backfill has been performed. Then, the study of the 3D failure due to a localised vertical pressure on the top wall, which is the standard loading case for highway retaining walls, was initiated. The interlocking of blocks was found critical to mobilise friction in the structure.

The Postdoctoral applicant will pursue this work to understand how the induced 3D failure is influenced by the disposition and shape of the stone blocks.

The modelling will be based on actual full scale experiments that were performed in a former project in 2013. This study of the generic disposition and shape of the blocks will be undertaken using the DEM code 3DEC (code ITASCA). The applicant will benefit of the existing work performed with the code.

The candidate must have completed a PhD, with a strong background in Solid Mechanics. Good programming skills are expected, particularly in relation with DEM.

Procedure: Applications involving CV, research skills and interests, diploma, can be sent by email to: eric.vincens@ec-lyon.fr.

Salary: standard in a French institution 2000€/month

Supervision: E. Vincens, Associate Professor at Ecole Centrale de Lyon

Applications will close as soon as a suitable candidate is found.

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