

COLLABORATIVE RESEARCH CENTER 837

## INTERACTION MODELING IN MECHANIZED TUNNELING

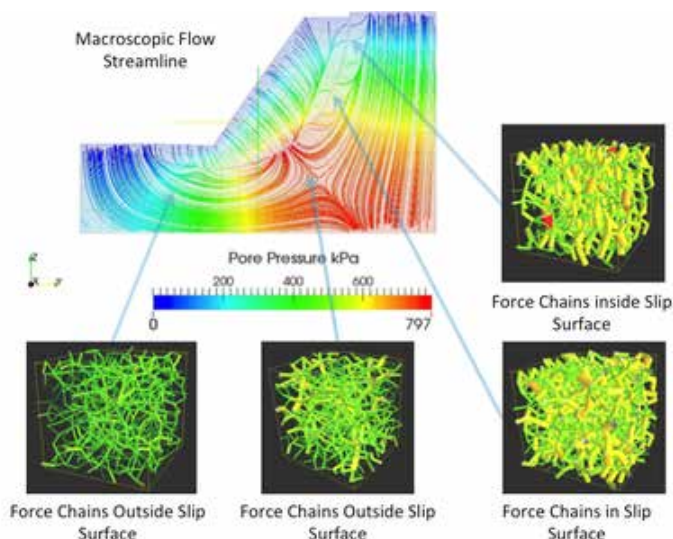
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# MODELING FLUID-INFILTRATING – PARTIALLY-FROZEN AND QUASI-BRITTLE POROUS MEDIA WITH NONLOCAL DISCRETE-CONTINUUM TECHNIQUES

Prof. Steve WaiChing Sun

29.07.2016 – 10:00 – IC 6/90

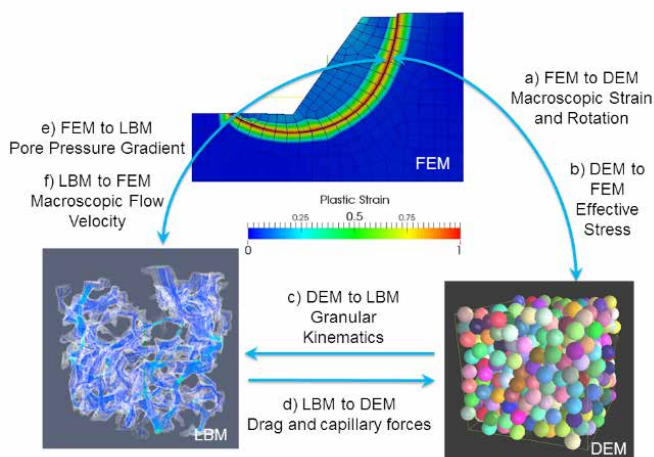
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Many engineering applications, such as geological disposal of nuclear waste, require reliable predictions on how porous media responds to extreme environments. This presentation will discuss the relevant modeling techniques designed specific for porous media subjected to such harsh environments.

In particular, this talk will provide an overview of:

- a finite strain finite element model that captures the freeze-thaw action of frozen soil,
- the variational eigen-fracture techniques used to model brittle fracture and compaction bands,
- the usage of multiscale techniques to link grain-scale simulations to macroscopic predictions and hence bypass the usage of any macroscopic phenomenological law.



Guests are welcome!