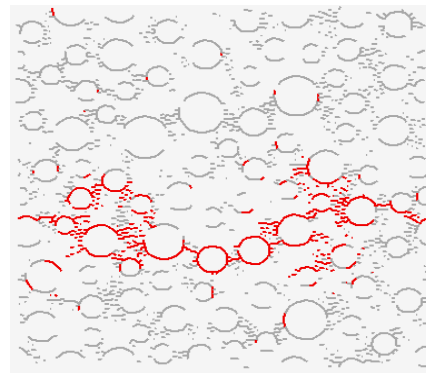
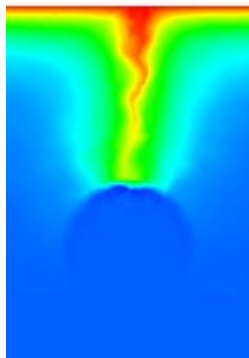


VIRTUAL LABORATORY FOR DURABILITY OF CONCRETE

Dr. Peter Grassl

Department of Civil Engineering, University of Glasgow

**Přednáška v rámci semináře katedry mechaniky
ve čtvrtek 23. října 2008 od 10:30 hodin v B 169**



Fracture, moisture transport and shrinkage in concrete are complex processes, which strongly depend on the meso- and micro-structure of the material. However, many of the macroscopic constitutive models for the nonlinear response of concrete are phenomenological and cannot be used for predictions outside the range of experimental results.

The presentation deals with a meso-scale modelling approach, which relies on the description of the response of the different phases of the material, e.g. aggregates, cement matrix, interfacial transition zones and their interaction. Fracture, moisture transport and drying shrinkage are modeled on the meso-scale by a discrete approach, in which the continuum is idealised by a network of lattice elements.

The potential of the modelling approach is demonstrated by several challenging examples: shape of the fracture process zone of concrete, moisture transport in cracked concrete, and micro-cracking induced by aggregate-restrained drying shrinkage. It is shown that this meso-scale modelling approach helps to improve the understanding of the material response.

*Přednáška v **angličtině** se koná ve čtvrtek 23.10.2008 od 10:30 hodin ve velké zasedací síni děkana (místnost B169) v budově Stavební fakulty ČVUT v Praze, Thákurova 7, Dejvice. **Všichni zájemci jsou srdečně zváni.***

Podrobnější informace poskytne Prof. Milan Jirásek, tel. 224 354 481, Milan.Jirasek@fsv.cvut.cz.