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DISCRETE MATERIAL MODELLING AT VARIOUS SCALES

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SUMMARY

The session addresses recent developments and challenges in material modelling by taking into account their material structure and discrete nature. It is aimed to gather contributions presenting research on discrete modelling of solids as well as multiphase systems with solid phase, e.g. fluid-particle mixtures. Theoretical developments and applications of various numerical methods based on discrete treatment of materials at various levels, such as:

- atomistic models,
- molecular dynamics,
- discrete element method,
- cellular automata

and others are expected. Contributions presenting methods and results of multiscale modelling involving above mentioned methods are welcome. Coupling of different methods, for instance DEM and CFD, is within the scope of interest. The session is open for different practical applications, including geomechanics, materials science, chemical engineering, metallurgy, mechanical and civil engineering, biomechanics.