**Title**:

A Multi-Scale Perspective of Computational Plasticity

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**Abstract**:

Crystal plasticity is an inherent multiscale process that ranges in length scale from the atomic scale of the dislocation cores to the micrometer scale of dislocation substructures, and the intermediate mesoscopic scale of elastic interactions between defects. The associated temporal scales range from fast events driven by dislocation glide and slower thermally-activated events like dislocation nucleation, cross-slip and climb, obstacle bypass or solute drag. Considerable progress has been made over the past years toward an understanding of crystal plasticity from multiscale perspective. There is also an increased interest in revealing plastic mechanism and developing the methods under multi-physics conditions. To highlight such achievements and facilitate meaningful exchange of ideas between experts engaged in this field, this symposium will focus on recent advances in dislocation-based modelling of plasticity, from the atomic to the continuum scale.

**Key words**: Crystal plasticity, Multiscale modelling

Topics of interest include the following:

1. Fundamental plastic behaviours.
2. Atomistic simulation, dislocation dynamics simulation, or crystal plasticity models.
3. Multiscale bridging methods linking different scales in crystal plasticity.
4. Engineering application of crystal plasticity.