

COMPUTATIONAL SOLID MECHANICS – MESO-SCALE/MULTI-SCALE

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● Microstructure-based Durability of Functionally Graded Materials

- Random field for microstructure
- Level-set (XFEM) for microstructure-based stress analysis
- Cohesive model for grain boundary decohesion and fatigue crack initiation
- Dimension-reduction for stochastic durability analyses

● Multi-scale Continuum-Atomistic Modeling by XFEM and Molecular Dynamics (Future)

