

Phase-field modeling and computation of fracture and fatigue

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The talk discusses recent research results obtained in the group of the speaker in the framework of the phase-field approach to fracture, and the recent extensions to fracture in partially saturated porous media and to fatigue. Applications include the study of desiccation phenomena in soils and shrinkage in cementitious materials, as well as the investigation of fatigue phenomena in brittle materials. The first steps towards mesoscale modeling of fracture in concrete are also discussed.