

Gambrinus Fellowship 2019

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Understanding deformation and failure of heterogeneous materials using in situ computed tomography

X-ray micro-computed tomography provides significant opportunities for understanding the evolution of complex materials at full volume and high resolution. Of particular importance is the role that material structure plays in terms of the relative effects on localized material straining during the deformation process. In this talk, we will discuss the use of X-ray tomography to understand material failure in various solids including open cell lattices/foams, additively manufactured microstructure, and granular assemblies. In each of these material cases, analyses of the in situ data using digital volume correlation and advanced morphological segmentation methods are shown to provide useful information regarding the role of local material structure on the nature of failure. The role of various experimental in situ testing parameters on the underlying measurement uncertainty will also be discussed.



Thursday, October 10, 2019
10 a.m. to 12 p.m., Seminar room 3.1
Baroper Str. 299, 44227 Dortmund