



The Fifth International Conference on Damage Mechanics (ICDM5)

Date: 16th - 18th July 2025

Venue: National University of Singapore

<p>Mini Symposium Title</p>	<p>Modeling and Simulation of Damage in Elastic and Plastic Materials</p>
<p>Short description on the focus of the Mini Symposium</p>	<p>The modeling and numerical simulation of damage phenomena is an essential part for the evaluation of mechanical structures, e.g., in civil engineering, in order to estimate their functionality and reliability. Specifically, the topic of fracture propagation for different material types like brittle and ductile materials is crucial. Commonly used methods to evaluate the propagation include the insertion of cohesive elements or the replacement of the discrete fracture with a continuous phase-field variable. This provides the possibility to evaluate risks and danger and perform maintenance before exceeding safety thresholds.</p> <p>The topics of this session include theoretical approaches and practical applications of the modeling of fracture with the previously mentioned methods as well as novel methods to simulate fracture propagation like optimization approaches, e.g., topology and shape optimization.</p>
<p>Organizers</p>	<p>Tim Suchan, Helmut Schmidt University / University of the Federal Armed Forces Hamburg, Germany</p> <p>Kathrin Welker, Helmut Schmidt University / University of the Federal Armed Forces Hamburg, Germany</p>