Session description

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Title of the session: Virtual and experimental testing methods for structural assessment of composite structures

Objectives: New materials and processes expand the design capabilities of multi-material structures, especially of composite structures. In view of increasing requirements regarding their structural integrity, new testing methods are required that capture new phenomena and occurring interdependencies. Furthermore, the ongoing digitalization combines virtual and experimental testing, conveying new concepts for more efficient testing approaches, and thus brings in the foreground challenges such as the interface between experiment and simulation, online validity of the models, virtual certification etc.. The aim of the session is to discuss new challenges for novel virtual and experimental testing methods on the example of selected contributions. In particular, the subjects include but are not limited to:

- New in-situ experimental testing methods for composite structures
- Real time simulation for virtual mechanical characterisation
- Challenges towards the development of digital twins for composites
- Structural assessment methods under gradual damage evolution