



SEMINAR

APPLIED MATHEMATICS AND MECHANICS

FS964

23 July 2021

A DCAMM seminar No. 748 will be presented by

Ramesh Talreja
Tenneco Professor of Engineering
Department of Aerospace Engineering
Department of Materials Science and Engineering
Texas A&M University, College Station, Texas, USA

The title of the lecture is

Failure analysis of composite structures with manufacturing defects

Abstract:

This presentation outlines a strategy for designing composite structures accounting for the presence of defects that are inevitable in practical manufacturing processes. The essential components of the strategy are incorporation of defects in physical models for assessment of composite performance and connecting the performance metrics to defect severity measures. A cost/performance trade-off then leads to cost-effective design. To illustrate the strategy, two examples of failure in composites under transverse tension and under axial compression are taken. Stochastic simulations of representative volumes are conducted to develop defect severity measures and to assess failure. Experimental data are used to validate the predictions of the physical models and parametric studies are performed to illustrate trends in effects of manufacturing defects on design thresholds.

DATE:	Tuesday, 17 August 2021
TIME:	14:00 – 14:45
PLACE:	Room 061E, Building 414 DTU, Technical University of Denmark

Danish pastry, coffee and tea will be served 15 minutes before the seminar starts.

All interested persons are invited.

Niels Leergaard Pedersen

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