



# SEMINAR

APPLIED MATHEMATICS AND MECHANICS

FS970

29 April 2022

A DCAMM seminar No. 752 will be presented by

**Research Fellow Renato Picelli Sanchez**  
**University of São Paulo, Brazil**

The title of the lecture is

## **Topology Optimisation by Sequential Integer Linear Programming Applied to Multi-physics**

### **Abstract:**

For years, integer programming in topology optimisation was deemed intractable due to large computational expenses and inability to effectively handle constraint nonlinearities. However, this can now be reevaluated. This talk provides first a historic overview of the methods employing binary design variables and then focuses on a topology optimisation framework based on sequential integer linear programming. Applications are given for coupled multi-physics problems in solid and fluid mechanics. The promising characteristics of the overall framework will be illustrated with 2D and 3D problems, including acoustics, turbulent flow and fluid-structure interaction.

DATE:	<b>Friday, 6 May 2022</b>
TIME:	<b>13:00 – 13:45</b>
PLACE:	<b>Building 414, Room 055B</b> 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

**DANISH CENTER FOR APPLIED MATHEMATICS AND MECHANICS**

**• TECHNICAL UNIVERSITY OF DENMARK • AALBORG UNIVERSITY**  
**• AARHUS UNIVERSITY • UNIVERSITY OF SOUTHERN DENMARK**