

**Programme for Wednesday afternoon,
March 9th**

11:30 Arrival

12:00 - 13:00 Lunch

13:00 - 13:05 Welcome and practical information,
NIELS L. PEDERSEN (DTU
Mechanical Engineering, 5 minutes)

13:05 – 14:45 MATERIALS & MORE
(Chairman: Ramin Aghababaei, AU
Dept. of Mechanical and Production
Engineering))

ALIREZA DAMAN PAK (SDU
Dept. of Mechanical Engineering and
Electrical Engineering, 20 minutes)
Thermo-mechanical modeling of
shape memory alloy

CHRISTIAN FELTER (DTU
Engineering Technology, 20 minutes)
The inverted pendulum for BEng
students

PHILIP KRÆN KRISTENSEN
(DTU Mechanical Engineering, 15
minutes)
Phase field modeling of hydrogen
embrittlement

VISHAL VISHWAKARMA (DTU
Mechanical Engineering, 15 minutes)
Unravelling void size effects in
ductile plate tearing at the
engineering scale

GÖKTUG ISIKLAR (DTU
Mechanical Engineering, 15 minutes)
Effect of geometric length-scale on
quality factor to mode volume ratio in
finite-sized photonic nanocavities

XUEYAN HU (AAU Dept. of
Materials and Production, 15
minutes)
Solving stress constrained problems
via a trust region based moving
asymptotes method

14:45 - 15:15 Coffee break

15:15 – 16:20 FLUID
(Chairman: Morten Brøns, DTU
Compute)

JENS NØRKÆR SØRENSEN (DTU
Wind Energy, 20 minutes)
A short history of (wind turbine)
aerodynamics

ALI AMARLOO (AU Dept. of
Mechanical & Production
Engineering, 15 minutes)
LES and LES-informed RANS
simulations of large-scale roughness-
induced secondary flows

MARIO JAVIER RINCÓN (AU
Dept. of Mechanical & Production
Engineering, 15 minutes) Numerical
and experimental studies of industrial
internal flows: Application to
ultrasonic flow meters

EMILY HODGSON (DTU Wind
Energy, 15 minutes)
Validation of aeroelastic actuator line
for wind turbine modelling in
complex flows

16:50 – 17:20 POSTER PRESENTATIONS
(Chairman: Niels Aage, DTU
Mechanical Engineering)

17:20 – 18:50 POSTER SESSION

For PhD's started after 1 April 2021
or later (15)

DTU Mechanical Engineering (8)

(1) JAMIE ENGELHARDT SIMON
Heterogeneities as a trigger to ductile
failure in metal plates subject to
bending

(2) ANDREAS FREDERIKSEN
Topology optimization for contact
problems

(3) MIKKEL TANDRUP
STEFFENSEN
Quantification of uncertainty in
structural dynamic models

(4) FELIX FRANKUS
Dislocation dynamics simulations

(5) BJARKE JUUL GEORGI
ØSTERGAARD
Crystal plasticity simulations

(6) JONATHAN MIRPOURIAN
Large-scale structural optimization
for hearing systems

(7) HOSSEIN SOLEIMANI
Contact dynamics for micro acoustic
devices

(8) LIANG XUE
Eigenvectors-guided topology
optimization to control the mode
shape and suppress the vibration of
the multi-material plate

DTU Wind Energy (3)

(9) JESPER KJÆR JØRGENSEN
Modelling Process-induced residual
stresses in composite materials

(10) ANTONIOS TEMPELIS
Digital twin for wind turbine blade
leading edge erosion

(11) OLE NIELSEN
Characterization of manufacturing
induced defects in pre-manufactured
composites for wind turbine blades

**SDU Dept. of Mechanical and
Electrical Engineering (2)**

(12) DEBORAH KASCHUBE
Fatigue analysis of additively
manufactured titanium components

(13) YUPENG SUN
Topology optimisation of thermal and
fluid problems

**AAU Dept. of Materials and
Production (1)**

(14) ALEXANDER THAI
Analysis and design of wind turbine
blades with prefabricated carbon fiber
subcomponents

**AU Dept. of Mechanical and
Production Engineering (1)**

(15) MARTIN SUHR
Video-based measurements for
validation of wind turbine dynamics

19:00 – Dinner

Programme for Thursday morning, March 10th
07:00 - 09:00 Breakfast

09:00 – 10:40 OPTIMIZATION I

(Chairman: Joe Alexandersen, SDU
Dept. of Mechanical and Electrical
Engineering)

OLE SIGMUND (DTU Mechanical
Engineering, 20 minutes)
Multiscale topology optimization

ERIK A. TRÄFF (DTU Mechanical
Engineering, 15 minutes)
High resolution topology
optimization state-of the art and
challenges

PETER JENSEN (DTU Mechanical
Engineering, 15 minutes)
De-homogenization of optimal 2D
topologies for multiple loading cases

CHRISTOFFER CHRISTENSEN
(DTU Mechanical Engineering, 15
minutes)
Topology optimization for buckling
with microstructure and local
buckling stress constraint

REBEKKA VAARUM WOLDSETH
(DTU Mechanical Engineering, 15
minutes)
On the use of machine learning in
topology optimisation

YAFENG WANG (DTU Mechanical
Engineering, 20 minutes)
Topology optimization of active
structural systems

10:40 – 11:10 Coffee break

11:10 – 12:00 INVITED PRESENTATION

(Chairman: Niels L. Pedersen, DTU
Mechanical Engineering)

MIKAEL A. LANGTHJEM (AU
Dept. of Mechanical and Production,
45 minutes)
Some problems solved by the method
of Matched Asymptotic Expansions

12:00 – 13:00 Lunch

Programme for Thursday afternoon, March 10th

13:00 – 14:00 DYNAMICS I

(Chairman: Jan Høgsberg, DTU
Mechanical Engineering)

KARSTEN KRAUTWALD
VESTERHOLM (SDU Dept. of
Mechanical and Electrical
Engineering, 15 minutes)
Random decrement based vibration
analysis of nonlinear systems

FARHAD FARHADIYADKURI
(AU Dept. of Mechanical and
Production Engineering, 15 minutes)
Development of robotic brace
integrated with 3D-ultrasound for
AIS treatment

ZHENGXUE ZHOU (AU Dept. of
Mechanical and Production
Engineering, 15 minutes) Dynamics
and control of collaborative industrial
mobile robot manipulators for SME
production and manufacturing

KRISTIAN LADEFOGED
EBBEHØJ (DTU Mechanical
Engineering, 15 minutes)
Comparison of methods for
estimating short-term damping of
idling wind turbine modes from
measurements

14:00 – 18:00 Social Event (BUS ER BESTILT
MED AFGANG 14:05)

19:00 - Banquet

Programme for Friday morning, March 11th

07:00 - 09:00 Breakfast

09:00 – 10:40 COMPOSITES

(Chairman: Brian Nyvang Legarth, DTU Mechanical Engineering)

LARS PILGAARD MIKKELSEN (DTU Wind Energy, 20 minutes)
Mapped 3D x-ray determined and structure tensor segmented fiber orientations into finite element models of composite materials for accurate stiffness, local stress fields, and compression strength predictions

JENS BENDER (AAU Dept. of Materials and Production, 20 minutes)
Effect of variable amplitude block loading on intralaminar crack evolution in a multidirectional GFRP laminate

ASBJØRN MALTE OLESEN (AAU Dept. of Materials and Production, 15 minutes) Characterizing static failure in discontinuous preform laminates via image processing

LUJIN LIN (DTU Mechanical Engineering, 15 minutes)
The effect of impact on the initiation and propagation of debonds in sandwich structures

PETER HEDE BROBERG (AAU Dept. of Materials and Production, 15 minutes)
Predicting out-of-plane fibre wrinkling in forming of thick binder-stabilised preforms during wind turbine blade manufacturing

GUILLEM GALL TRABAL (AAU Dept. of Materials and Production, 15 minutes)
Face the interface: A formulation for adaptive progressive fatigue propagation analysis of multiple delaminations based on floating nodes

10:40 - 11:00 Coffee break

11:00 - 12:10 OPTIMIZATION II

(Chairman: Esben Lindgaard, AAU Dept. of Materials and Production)

JOE ALEXANDERSEN (SDU Dept. of Mechanical and Electrical Engineering, 20 minutes)
Optimisation of parallel plate heat exchangers

FEDERICO FERRARI (DTU Mechanical Engineering, 20 minutes)
Revisiting optimal sizing of 1D beams subjected to vibration and buckling

JENNA IORI (DTU Wind Energy, 15 minutes)
Study of planform parametrization choices for wind turbine blade design optimization

LUKAS CHRISTIAN HØGHØJ (DTU Mechanical Engineering, 15 minutes)
Revisiting elements for topology optimization of turbulent flows

12:10 – 13:00 Lunch

13:00 – 13:45 DYNAMICS II

(Chairman: Sine L. Wiggers, SDU Dept. of Mechanical and Electrical Engineering)

MARIJA GLISIC (AU Dept. of Mechanical and Production Engineering, 15 minutes)
Unit Process Life Cycle Inventory – Centerless grinding

XINGYU YANG (AU Dept. of Mechanical and Production Engineering, 15 minutes)
An electro-mechanical dynamic model and digital twin of a collaborative robot joint

IOANNIS ASIMAKOPOULOS (SDU Dept. of Mechanical and Electrical Engineering, 15 minutes)
Data-driven condition monitoring of two-stroke marine diesel engine piston rings

13:45 – 14:00 Closing of the DCAMM Symposium

14:10 Departure from the hotel