

Final Program Engineering Mechanics

Tuesday 2 november 2021, Online	
9:00-9:50	Assembly of Project Leaders EM
9:50-10:00	Break
10:00-10:35 Opening Session and introduction workshop 1 and 2	
10:00-10:05	Opening of the Symposium by prof.dr.ir. Harald van Brummelen
10:05-10:20	Trends and challenges in “Metamaterials” by dr.ir. Ondřej Rokoš
10:20-10:35	Trends and challenges in “Engineering Dynamics: from Nano to Giga” by dr.ir. Karel van Dalen
10:35-10:40 Break	
10:40-12:05 Workshops 1 and 2	
Workshop 1: Metamaterials	Workshop 2: Engineering Dynamics: from Nano to Giga
10:40-11:00 Georgia Kuci (TU/e) <i>Acoustic metasurface for ultrasound manipulation</i>	10:40-11:00 Koen Dwarshuis (UT) <i>An arbitrarily shaped element in SPACAR – applied for fast simulation of flexure mechanisms.</i>
11:00-11:20 Nitesh Anerao (RuG) <i>Experimental probing of acoustic metamaterials</i>	11:00-11:20 Rinus Hoogesteger (TU/e) <i>“Feeling” buried features, a nonlinear dynamical approach</i>
11:20-11:25 Break	
11:25-11:45 Sumit Mohanty (UT) <i>Acoustically-powered bubbles: from metamaterials to actuators</i>	11:25-11:45 Athanasios Tsetas(TUD) <i>Gentle driving of piles (GDP): field experiments and numerical modelling</i>
11:45-12:05 Sabiju Valappil (TUD) <i>Phononic structures to improve the accuracy of ultrasonic transducers</i>	11:45-12:05 Xianfeng Chen (TUD) <i>Diamagnetically levitating resonant sensors</i>
12:05-13:00	Lunch

13:00-15:00 Introduction workshops 3 and 4	
13:00-13:15	Trends and challenges in “Optimization” by dr.ir. Matthijs Langelaar
13:15-13:30	Trends and challenges in “High-performance computing” by dr. ir. Anthony Thornton
13:30-13:35 Break	
Workshop 3: Optimization	Workshop 4: High-performance computing
13:35-13:55 Stijn Koppen (TUD) <i>Topology optimization of flexures</i>	13:35-13:55 Bram Dorussen (TU/e) <i>A Hybrid Discrete Element and Raytracing Model for the Analysis of Powder-bed Additive Manufacturing</i>
13:55-14:15 Brandon Caasenbrood (TU/e) <i>Topology optimization of hyper-elastic soft robots</i>	13:55-14:15 Björn Nijhuis (UT) <i>Reduced order modelling for efficient simulation of problems with local nonlinearities</i>
14:15-14:20 Break	
14:20-14:40 Ali Amoozandeh Nobaveh (TUD) <i>A shape parametrization scheme for designing spatial compliant mechanisms</i>	14:20-14:40 Hugo Verhelst (TUD) <i>A Parallel Adaptive Arc-Length Method</i>
14:40-15:00 Andrea Cupertino (TUD) <i>High-Q spiderweb nanomechanical resonators by Bayesian optimization</i>	14:40-15:00 Marina Maia(TUD) Accelerating multiscale finite element simulations using neural networks with embedded physics-based material models
15:00-15:05 Break	
15:05-15:25 Prize ceremony	
15:25-15:30	Closure