

Invitation to participate
2nd OptiMACS Network Short Course:

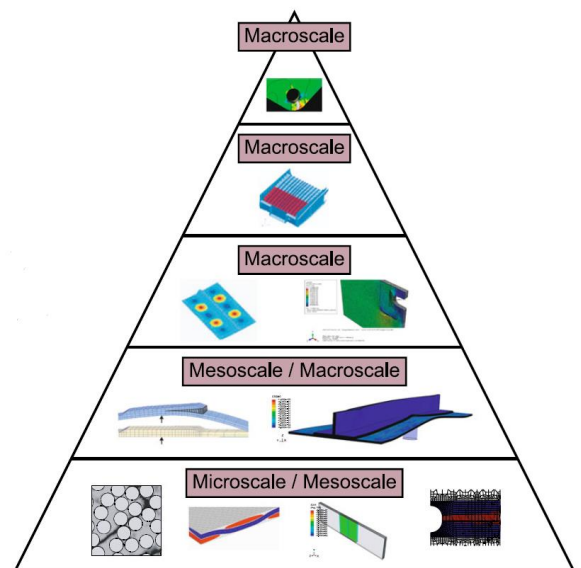


Manufacturing-informed optimisation

September 17-18, 2019
University of Nottingham
Faculty of Engineering
Nottingham, UK

Even though the use of composite materials in modern aeroplanes has increased drastically in the last few years, optimization of aerospace composite structures is still a particularly challenging task. A truly optimal solution is usually difficult to achieve, limiting the full exploitation of the benefits of composites. This is partially due to interaction between the various different manufacturing processes (whether these involve single fibre tows, tapes, prepreg sheets etc.) and the shapes, thicknesses and lamination sequences which can be achieved via these processes. **OptiMACS** aims at improving the accuracy and efficiency of Multidisciplinary Design Optimization (MDO) models and techniques by enhancing the design models and criteria related to composites failure and manufacturing, developing and implementing multiscale models for composites, as well as investigating advanced MDO algorithms and architectures for enhancing efficiency.

The primary objective of this Network Short Course (NSC) is to provide a view of state-of-art analysis methods and recent advancements in the optimisation of engineering structures including composite structures, taking account of constraints imposed by manufacturing processes, as well as the possibilities provided by the large number of design variables inherent in composite materials.



LIST OF SPEAKERS

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| • Prof. Ian Ashcroft
<i>University of Nottingham, UK</i> | • Dr. Markus Schatz
<i>TU Munich/Airbus Immenstaad, Germany</i> |
| • Prof. Marco Montemurro
<i>ENSAM, France</i> | • Prof. Paul Weaver
<i>University of Bristol, UK & University of Limerick, Republic of Ireland</i> |
| • Prof. Sergio Ricci
<i>Politecnico di Milano, Italy</i> | • Dr. Lucian Iorga
<i>Airbus Operations Ltd, Bristol, UK</i> |

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SCHEDULE DAY 1, TUESDAY SEPTEMBER 17, 2019

TIME	PROGRAM
13:00	Introduction to Network Short Course by Prof. Arthur Jones and Dr. Tom Turner
13:05	OptiMACS global overview by Dimitrios Chronopoulos
13:30	Optimisation methods for composites and 3D Printing by Prof. Ian Ashcroft (University of Nottingham, UK)
14:20	Multi-scale optimisation of composite structures by integrating manufacturing requirements by Prof. Marco Montemurro (ENSAM, France)
15:10	Coffee break
15:30	Multidisciplinary design optimisation of aerospace structures by Prof. Sergio Ricci (Politecnico di Milano, Italy)
16:50	Closing of the 1st day

SCHEDULE DAY 2, WEDNESDAY SEPTEMBER 18, 2019

TIME	PROGRAM
09:00	Opening of the 2nd day
09.15	Structural design optimisation simultaneously considering manufacturing and mechanics by Dr. Markus Schatz (TU Munich/Airbus Immenstaad, Germany)
10:05	Design and optimisation of anisotropic composite structures by Prof. Paul Weaver (University of Bristol, UK, and Bernal Institute, University of Limerick, Republic of Ireland)
10.55	Coffee break
11.15	Sizing optimisation of aircraft structures – industrial challenges and practices by Dr. Lucian Iorga (Airbus Operations Ltd, Bristol, UK)
12.05	Early Stage Researcher talks (part 1): Georgios Ntourmas ESR 1 Giuseppe Corrado ESR 2
12.45	Lunch
13.45	Early Stage Researcher talks (part 2): Neoklis Traiforos ESR 3 Massimo Sferza ESR 4 Weijie Tan ESR 5
14.45	Seminar closing message
15.00	Coffee and finish



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