



Dynamics
Research
Group

The 4th Sheffield Workshop on Structural Dynamics

Hybrid Event 7th-9th June 2022

Thank you for confirming your attendance at the 4th Sheffield Workshop on Structural Dynamics. As you will be aware, this year's workshop will be run as a hybrid event. For those joining us online a link will be sent in due course for you to access the event.

The main body of the workshop will have three distinct themes, physics-informed machine learning (7th), population-based SHM (8th) and digital-twins and their validation (9th).

The schedule is provided on the next pages. We look forward to meeting you all soon!





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7th June 2022

Physics Informed Machine Learning

GMT			CEST	
Start	End		Start	End
09:30:00	09:45:00	Introduction and welcome to the workshop, Lizzy Cross, Dynamics Research Group	10:30:00	10:45:00
09:45:00	10:30:00	GPLFMs for virtual sensing in an offshore wind context, Eliz-Mari Lourens, TU Delft	10:45:00	11:30:00
10:30:00	11:00:00	Break	11:30:00	12:00:00
11:00:00	11:45:00	Physics-informed machine learning for crack localisation via AE, Matthew Jones, University of Sheffield	12:00:00	12:45:00
11:45:00	12:30:00	Discussion session 1 - questions from talks. Suggested discussion: prior knowledge sources and their suitability for hybrid models	12:45:00	13:30:00
12:30:00	14:00:00	Lunch	13:30:00	15:00:00
14:00:00	15:00:00	Modelling and Controlling Turbulent Flows through Deep Learning, Ricardo Vinuesa, KTH Stockholm.	15:00:00	16:00:00
15:00:00	16:00:00	Discussion session 2 - questions from talks. Suggested discussion topics: shared challenges for (PI)ML across disciplines	16:00:00	17:00:00



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Population Based Structural Health Monitoring

GMT			CEST	
Start	End		Start	End
09:30:00	09:45:00	Introduction and welcome, Paul Gardner, University of Sheffield.	10:30:00	10:45:00
09:45:00	10:30:00	Value of Information from SHM for emergency management, Maria Pina, Politecnico di Milano.	10:45:00	11:30:00
10:30:00	11:00:00	Break	11:30:00	12:00:00
11:00:00	11:45:00	Knowledge Transfer in Engineering Fleets, Lawrence Bull, The Alan Turing Institute.	12:00:00	12:45:00
11:45:00	12:30:00	Discussion session 1 - questions from talks. Suggested discussion: Information sharing between data and physics models for PBSHM technologies.	12:45:00	13:30:00
12:30:00	14:00:00	Lunch	13:30:00	15:00:00
14:00:00	14:45:00	Assessing similarity in PBSHM for transfer learning, Chandula Wickramarachchi, University of Sheffield.	15:00:00	15:45:00
14:45:00	15:30:00	A general overview of PBSHM ideas and ROSEHIPS, Nikolaos Dervilis, University of Sheffield.	15:45:00	16:30:00
15:30:00	16:00:00	Discussion session 2 - questions from talks. Suggested discussion topics: Challenges and successes on the wider and robust implementation of SHM systems and PBSHM technologies.	16:30:00	17:00:00



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Digital Twins & Their Validation

GMT			CEST	
Start	End		Start	End
09:15:00	09:50:00	Welcome & A DRG Perspective on Digital Twins: Challenges and Opportunities Tim Rogers, University of Sheffield	10:15:00	10:50:00
09:50:00	10:30:00	Digital Twin Technology Spotlight Talks: Gemma Beard & Erika Le Doze, IOTICS Marcus Haywood-Alexander, The University of Sheffield	10:50:00	11:30:00
10:30:00	12:30:00	LVV 2022 Showcase (Bus to and from LVV)	11:30:00	13:30:00
12:30:00	13:30:00	Lunch	13:30:00	14:30:00





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If you want to find out more about the Laboratory for Verification & Validation and work with us email c.w.field@sheffield.ac.uk or visit us at <https://lvv.ac.uk>

