

Draft Programme of CIRP CAT 2024

26th June, 2024

	Lecture Theatre xx
16:00 – 17:30	Visits to laboratories of the EPSRC Advanced Metrology Hub for Sustainable Manufacturing (for interested participants)
16:00 – 18:30	Conference Registration / Tea & Coffee

27th June, 2024

	Lecture Theatre xx
08:10	Registration / Tea & Coffee
08:50	Opening of the Conference
09:10	Keynote I: Prof Nabil Anwer
	Session 1: Specification and Verification
09:40	<i>GPS&V Textual Language (Jean-Francois MAUREL)</i>
10:00	<i>Content evolution in ISO GPS documents in product development (Mattia Maltauro)</i>
10:20	<i>Adaptive Datum Points Location Optimization Method for Flexible Workpieces based on Centroid Characteristics (Yanlong Cao)</i>
10:40	<i>On Skin Model Describability using Laplace-Beltrami Operator for Geometrical Product Specification and Verification (Yifan Qie)</i>
11:00	Coffee & Posters
	Session 2: Smart Tolerancing
11:30	<i>Overview of mathematical concepts for tolerance analysis (Jean-Yves DANTAN)</i>
11:50	<i>A full product/process numerical workflow based on Skin Model Shapes for tolerancing analysis of an assembly of composite parts (Tanguy MORO)</i>
12:10	<i>Statistical model for setting up a machining center to achieve geometric tolerances at maximum material requirement (Christophe Tournier)</i>
12:30	<i>Anisotropic rough surfaces representation in geometrical deviations modeling for tolerance analysis (Nan Shao)</i>
12:50	Lunch & Posters
14:20	Keynote II: Prof Ed Morse
	Session 3: Smart Tolerancing
14:50	<i>Generating Manufacturing Distributions for Sampling-based Tolerance Analysis using Deep Learning Models (Paul Schaechtl)</i>
15:10	<i>From manufacturing tolerancing to adaptive manufacturing targets (Alexandre PREVOT)</i>
15:30	<i>A Boundary Partitioning Algorithm for Geometrical Product Deviation Evaluation (Yanlong Cao)</i>
15:50	<i>Challenges in the Virtual Geometry Assurance of Proton Exchange Membrane Fuel Cell Stacks (Stefan Goetz)</i>
16:10	Coffee & Posters
	Session 4: Measurement and Metrology
16:40	<i>Enhancing Ellipsometry Analysis with Whale Optimisation: A Novel Approach for Precise Material Characterisation (Changcai Cui)</i>
17:00	<i>Multi-sensor data fusion framework and validation of algorithms with reference datasets (Louis-Ferdinand Lafon)</i>
17:20	<i>Evaluation of Reconstruction Methods in X-ray Computed Tomography Geometric Measurement (Kaojie Yue)</i>
17:40	<i>The X-ray computed tomography simulation in geometric metrology: a review and case study (Wuzhen Huang)</i>

28th June, 2024

	Lecture Theatre xx
09:00	Keynote III: Prof Liam Blunt
	Session 5: Measurement and Metrology
09:30	<i>On the transferability of nominal surrogate models to uncertainty consideration of clinch joint characteristics (Stefan Goetz)</i>
09:50	<i>Test of CaF2 glass sub-surface damage using angle-resolved ellipsometry (Jian Wang)</i>
10:10	<i>On Dealing with Outliers in Geometrical Measurements (Kexin Yin)</i>
10:30	<i>A Novel Measuring Strategy For Diamond Exposure Of Diamond Beaded Rope Saw On Machine Vision (Changcai Cui)</i>
10:50	Coffee & Posters
	Session 6: Tolerance Evaluation and Verification
11:20	<i>A Bayesian Approach For The Consideration Of Measurement Errors (Pierre Beaurepaire)</i>
11:40	<i>Introducing Artificial Neural Networks to predict the dimensional and micro-geometrical deviations of additively manufactured parts (Valentina Vendittoli)</i>
12:00	<i>Influence of Laminate Parameter and Draping Variations on Locally Reinforced Composite Parts (Stephan Freitag)</i>
12:20	<i>Active Learning Processes for Smart Inspection, Verification Operations and Modelling of Surfaces with Geometrical Deviations (Tanguy MORO)</i>
12:40	Lunch & Posters
	Session 7: Quality control and Tolerancing Training
14:10	<i>Quality control in manufacturing through temperature profile analysis of metal bars: A steel parts use case (Kosmas Alexopoulos)</i>
14:30	<i>Comparative Analysis of ISO GPS Knowledge and Usage in the Italian Market (Mattia Maltauro)</i>
14:50	<i>Virtual-tutoring-supported teaching for Geometrical Product Specification (Anna Sorgatz)</i>
15:10	<i>Flipped Learning using Video Training Material and Face-to-Face Training Materials for the ISO GPS Education (Shinya SUZUKI)</i>
15:30	Coffee & Posters
	Session 8: Hybrid topics
16:00	<i>Mobile-YOLO-SDD: A Lightweight YOLO for Real-time Steel Defect Detection (Chaolong Zhang)</i>
16:20	<i>Automatic raster engineering drawing digitisation for legacy parts towards advanced manufacturing (Charles Maupou)</i>
16:40	<i>Assessing layer deviations and correction for robotic polymer 3D printing applications (Ahmed Jawad Qureshi)</i>
17:00	<i>Parameter optimization for random generation of non-ideal surfaces using dual-tree complex wavelet transform (Akimasa Otsuka)</i>
17:20	End of Conference