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14th CIRP Conference on Computer Aided Tolerancing (CAT)

Editorial

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This Procedia CIRP volume contains the Proceedings of the 14th CIRP Conference on Computer Aided Tolerancing (CAT), arranged May 18-20th in Gothenburg, Sweden. The conference was hosted by Wingquist Laboratory and Chalmers University of Technology and was chaired by Professor Rikard Söderberg.

The theme of the conference was "Geometry Assurance in Product Realization". Geometry Assurance refers to all activities in the product realization process aiming at minimizing the effects of variation in the final product. These kinds of activities start already in early product development phases by finding design concepts that are robust to geometrical variation. Tolerance analysis, variation simulation and visualization of results from variation simulations can also be performed. During verification and pre-production, the concepts are compared, further developed and refined. Inspection preparation, which is an important aspect of geometry assurance, is conducted here. During full production, information and inspection data is collected and used for root cause analysis but also used as input to new projects. All those activities are important building blocks to achieve a robust product, which can be manufactured with high capability.

The conference included 60 papers of high quality. The papers addressed a variety of research topics, such as robust design in geometry assurance, specification and standardization, tolerance analysis and variation simulation, visualization of tolerances and variation, tolerancing for new materials and processes, quality control and measurement and inspection.

All papers were carefully reviewed by the International Scientific Committee. During the conference, keynote speeches were held by Professor Rikard Söderberg, Dr. Steven Hoffenson, Professor Dariusz Ceglarek, Professor Ed Morse and Dr. Vijay Srinivasan. There were also an industrial presentation titled "Challenges within geometry assurance at Volvo Cars", presented by Dr. Casper Wickman and MSc Sandra Kronholm.

I would like to express my gratitude to the keynote speakers as well as to the International Scientific Committee for their great efforts in reviewing the papers and thereby ensure the quality of this conference. Furthermore, I would like to express my sincere gratitude to all the members in the organizing committee. Particular acknowledgements go to our valuable sponsors and supporters: GKN Aerospace Engine, IKEA, RD&T Technology, Rosemont Tank Radar, Sandvik Coromant, Scania, SAAB, VA Automotive, Volvo Cars Group, Volvo Trucks Corporation and Produktion2030.