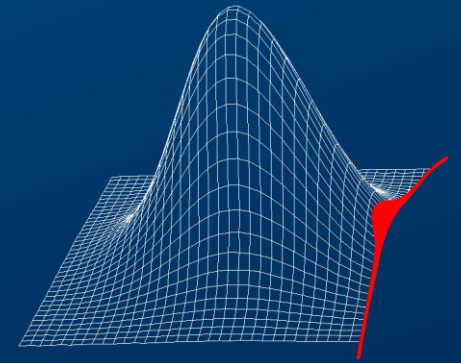


Institute of Fluid Mechanics
Chair of Turbomachinery and Flight Propulsion

11th Dresden Probabilistic Workshop

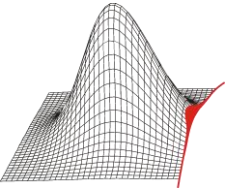
From Digital Twin to Artificial Intelligence

October 10 & 11, 2019, Dresden



Welcome

at 11th Dresden Probabilistic Workshop



Dear Sir or Madam,

We are excited to welcome you at the 11th Dresden Probabilistic Workshop on October 10 & 11, 2019. The workshop provides a platform for discussion and exchange of experience on the topics of statistics, digital twin, probabilistic analysis and artificial intelligence for engineers with academic, research and development, and service backgrounds. On these two days, 17 presentations will focus on scientific and technical questions, discussing suitable applications of probabilistic methods in mechanical engineering. We also invite you to join our common dinner in Dresden's city center on October 10 and to share your questions and experience.

The workshop is organized by the Chair of Turbomachinery and Flight Propulsion at TU Dresden which has been engaged in probabilistic research for more than 15 years.

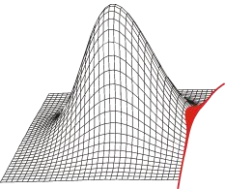
Kind regards from Dresden

Dr.-Ing. Matthias Voigt
Organizer

Prof. Dr.-Ing. habil. Ronald Mailach
Chair Holder

Agenda

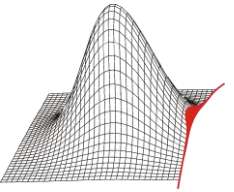
Thursday, October 10, 2019



- 11:00–13:00 *Registration; Zeunerbau, Room 255*
- 12:00–13:00 *Lunch break*
- 13:00–13:15 *Welcome; R. Mailach; Technische Universität Dresden*
- 13:15–13:45 „Data-intensive High Performance Computing at TU Dresden: Combining Computer Science Research with Support for Computational Sciences“
A. Knüpfer; *Technische Universität Dresden*
- 13:45–14:15 “Deep Gaussian Covariance Network – Machine Learning based on Probabilistic Intelligence”
K. Cremanns, D. Roos; *Niederrhein University of Applied Sciences*
- 14:15–14:45 “Bayesian Robust Design Optimization using Deep Gaussian Covariance Network”
C. Bogoclu, D. Roos; *Niederrhein University of Applied Sciences*
- 14:45–15:00 *Coffee break*
- 15:00–15:30 “Mixed aleatoric-epistemic uncertainty quantification for jet engine applications”
G. Antinori; *MTU Aero Engines AG*
- 15:30–16:00 „Meta-model-based Quality Assessment of Sample Estimates“
A. Prots; *Technische Universität Dresden*
- 16:00–16:30 “Spectre-UQ: A Computational Environment for Managing Total Uncertainty Quantification of CFD Studies”
E. P. N. Duque; *Intelligent Light*
- 19:00 *Dinner at [Feldschlößchen Stammhaus](#)*

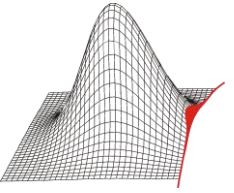
Agenda

Friday, October 11, 2019



- 09:00–09:30 „The Deterministic Model as Part of Probabilistic Analysis: Shortcomings and Potential for Development of CFD for Turbomachinery“
L. Wein; *Leibniz Universität Hannover*
- 09:30–10:00 “An industry ready approach to the characterization and reduction of manufacturing uncertainties“
S. Albert; *NUMECA*
- 10:00–10:30 “Digital Twin – Analysis of Static and Dynamic Geometric Phenomena – From Data Acquisition to the First Insight“
J. Scharfenstein, S. Wallstab-Freitag; *GOM*
- 10:30–10:45 *Coffee break*
- 10:45–11:15 “Condition-based classification of compressor blades“
J. Marx; *MTU Maintenance Hannover GmbH*
- 11:15–11:45 “Comparison of Probabilistic Assessments utilizing Geometric Inputs of Different Quality“
P. Magin; *MTU Aero Engines AG*
- 11:45–13:00 *Lunch break*
- 13:00–13:30 “Efficient stochastic modelling of an axial compressor rotor blades geometrical variability due to manufacturing uncertainties“
M. Gambitta; *Brandenburg University of Technology*
- 13:30–14:00 “Comparison of the Elementary-Effects Method and the Coefficient-of-Importance Using a One-dimensional Cooling Flow Network“
B. Fiedler; *MTU Aero Engines AG*
- 14:00–14:30 “Forecasting the Condition of HPT Parts by using BBN“
D. Giesecke; *Technische Universität Braunschweig*
- 14:30–14:45 *Coffee break*
- 14:45–15:15 „Explanation of Surface Deviations by Manufacturing Modes“
J. Urbano¹, D. Bestle¹, U. Gerstenberger², M. Meyer²;
¹*Brandenburg University of Technology*, ²*Rolls-Royce Deutschland*
- 15:15–15:45 “Towards the robust aerodynamic shape optimization of compressor blades“
M. Meyer; *Rolls-Royce Deutschland*
- 15:45–16:15 „Probabilistic FE-Analysis of Cooled High Pressure Turbine Blades“
L. Högner; *Technische Universität Dresden*
- 16:15 *Closing*; R. Mailach; *Technische Universität Dresden*

Registration



Please sign up for the workshop using this form ([registration.pdf](#)).

Please send the completed form to Andriy.Prots@tu-dresden.de until October 1, 2019.

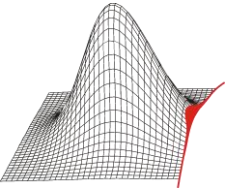
The conference fee is EUR 150 + VAT (19 %) for registrations until October 1, 2019.

Registrations after October 1, 2019 incur an additional fee of EUR 20 + VAT.

A confirmation of registration will be sent to you by email.

The bill for the registration fee will be sent to you by mail shortly after your registration.

Accomodation



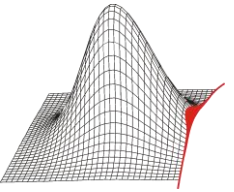
For your convenience, we have reserved rooms at the [ACHAT Comfort Dresden](#) from October 10 to 11, 2019. The hotel is located in the venue's immediate vicinity. The price for a single room incl. breakfast is EUR 72; the price for a double room incl. breakfast is EUR 89. Rooms are reserved until September 13, 2019 and may be confirmed with the booking code "*Dresden Probabilistic Workshop*".

Contact information:

ACHAT Comfort Dresden
Budapester Straße 34
01069 Dresden

+49 351 47380-0
dresden@achat-hotels.com

Contact & Venue



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at

Zeunerbau, Room 255
Technische Universität Dresden
George-Bähr-Straße 3c
01069 Dresden

www.probabilistic.info

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