北京理工大學

数学与统计学院学术报告

Data Analytics Empower Quality Control in Advanced Manufacturing

报告人： 岳小伟 清华大学工业工程系

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地点： 北京理工大学良乡校区文萃楼E311

摘要： Advanced data analytics can provide the opportunity to capture tremendous new productivity gains, reveal the implicit product and process know-how, improve quality control, and facilitate a digital transformation in manufacturing. In this talk, research practice on integrating data analytics with advanced manufacturing will be presented. We show the relationships between deep neural networks, Gaussian process, and differential equations, and use their connections to develop new physics-informed data analytics methods for tackling the high computational cost in high-fidelity simulation, digital twin, and virtual assembly. Stochastic surrogate models have been developed, including Neural Process Aided Ordinary Differential Equation (NP-ODE) and Neural network Gaussian process considering input uncertainty. We will also demonstrate other research examples about integrating and leveraging data analytics with quality control in composite structures assembly.

个人简介：

岳小伟，清华大学工业工程系副教授，博士生导师，入选国家海外高层次青年人才。曾任美国弗吉尼亚理工大学终身序列助理教授兼**Grado Faculty Fellow**、美国防部**MEEP Faculty Fellow**。入选**2021**届美国工程院工程前沿论坛杰出青年学者，并荣获美国工程院**Grainger**工程前沿基金奖，获国际工业与系统工程协会**Hamed K. Eldin**早期职业工业工程学者奖、制造与设计杰出青年研究奖、美国杰出青年制造工程师奖、美国统计学会**SPES**奖等。任**IISE Transactions**，**IEEE TNNLS**和**Journal of Intelligent Manufacturing** 副编，**PNAS Nexus**的编委。任中国质量奖、美国自然科学基金、以色列自然科学基金等评委。

主办单位：北京理工大学数学与统计学院

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