

INFORMS-QSR Webinar Series Presents:

Dr. Yu Ding, Texas A&M University, Speaks on

Wind Turbine Reliability and Performance Assessment, and the Data Science Relevance



Abstract. Wind energy is the front-runner of renewable energy sources. Its installed capacity in the U.S. has increased more than 20 folds in the past 16 years, from 4.2 GW in 2001 to 82 GW 2017. US Department of Energy envisions that wind will generate 20% of the nation's electricity by 2030 and 35% by 2050. China has been the largest wind energy provider worldwide since 2010 and its installed capacity in 2016 was 149 GW. Chinese government pledges that renewable sources, wind included, produce 15% of the nation's electricity by 2020. The ever-changing wind exerts a non-stationary and non-steady load on wind turbine drive train, causing wind turbines to deteriorate faster than other turbine machineries, and other harsh environmental conditions such as icing and lightning add to the low reliability of wind turbines. Low reliability drives up the cost of operations and maintenance and becomes one major obstacle towards wind energy's market competitiveness and viability without government subsidy.

In this talk, we will discuss the reliability issue in wind energy, approaches to assess the system-level performance for a wind turbine generator and strategies to countermeasure the decline in a turbine's power production capability, as well as the data science relevance to addressing research challenges in wind energy applications. This talk was previously presented on July 6, 2018 at the 8th International Workshop on Reliability Technology and Quality Science (RTQS-2018) at the Chinese Academy of Sciences in Beijing, China.

**Wednesday,
September 26,
12 – 1 pm (CST)**

Register here:

https://zoom.us/webinar/register/WN_CP4oXTMIQPyC1XQc2JJKWA

Bio. Dr. Yu Ding is the Mike and Sugar Barnes Professor of Industrial & Systems Engineering, Professor of Electrical & Computer Engineering, and a faculty affiliate with Texas A&M Energy Institute, all at Texas A&M University. Dr. Ding received a B.S. degree from the University of Science & Technology of China in 1993, an M.S. degree from Tsinghua University in 1996, an M.S. degree from Penn State University in 1998, and a Ph.D. degree from the University of Michigan in 2001. His research interests are in the area of system informatics, and data and quality science. Dr. Ding is a Fellow of IISE, a Fellow of ASME, a senior member of IEEE, and a member of INFORMS.

This event is free but advance registration is mandatory.