

Rocky Mountain INFORMS: April 15, 2024

The Rocky Mountain INFORMS Chapter is pleased to host Dr. Alex Zolan joined the Thermal Systems Group at the National Renewable Energy Lab (NREL) in August 2018 after obtaining a PhD in Operations Research and Industrial Engineering from the University of Texas at Austin. His recent work at NREL involves the development of optimization and simulation models for the design, dispatch, and maintenance of concentrating solar power and hybrid energy systems. His research experience is in the fields of stochastic optimization, Monte Carlo simulation, and technoeconomic analysis.



Optimization of Operations and Maintenance for Concentrating Solar Power Tower Systems

Abstract: Concentrating solar power (CSP) is an emerging large-scale renewable technology that uses sunlight to heat molten salt, which is stored and can be converted to electricity using conventional power cycle technology. This makes CSP unique among renewable energy resources due to its dispatchability; however, the intermittent nature of solar resources, coupled with pricing dynamics, power cycles that suffer from creep and fatigue during startup and shutdown operations, and limited storage, can make the tradeoffs between revenue-generating operations and systems maintenance planning nontrivial. We describe a toolkit comprised of a collection of simulation and optimization models for the operations and maintenance of a CSP production plant. These models, and the interfaces between them, provide optimal design and operations decisions for a CSP plant via a derivative-free solution method. We then describe a small collection of O&M optimization models in detail which include power plant dispatch, mirror washing, and aimpoint selection.

Zoom Option on Next Page

Topic: RMIC-April 15 Zolan

Time: Apr 15, 2024 06:00 PM Mountain Time (US and Canada)

Join from PC, Mac, Linux, iOS or Android:

<https://mines.zoom.us/j/92043704780?pwd=MFYydGhkdkIxaURkbWUyaEZlbWFqZz09>

Password: 635130

Or iPhone one-tap: 17193594580,92043704780# or 12532050468,92043704780#

Or Telephone:

Dial: +1 719 359 4580 (US Toll) or +1 253 205 0468 (US Toll)

Meeting ID: 920 4370 4780

International numbers available: <https://mines.zoom.us/u/acgpE0rv3>

Or a H.323/SIP room system:

H.323: 162.255.37.11 (US West) or 162.255.36.11 (US East)

Meeting ID: 920 4370 4780

Password: 635130

SIP: 92043704780@zoomcrc.com

Password: 635130