Robust Dynamic State Estimation and the Koopman Operator

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New Jersey Institute of Technology

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OVERVIEW

For this presentation, I will talk about dynamic state estimation in the first part of the talk. In particular, I will focus on a robust method that suppresses the adverse effect of outliers on the estimation process. I will discuss the tradeoff between centralized and decentralized implementations and their applications. Then, in the second part of the talk, I will introduce the Koopman operator and the data-driven numerics derived from it. I will draw connections between the latter and the availability of dynamic state estimates.

BIO

Dr. Marcos Netto joined NJIT as an Assistant Professor in January 2023 after being with the National Renewable Energy Laboratory for four years. His research focuses on understanding, characterizing, and controlling the dynamics of electric power grids from a data-centric standpoint. His research is at the interface of power system dynamics and state estimation, drawing from methods in control, dynamical systems, statistical signal processing, and applied mathematics.