

1154-37-2538

Carlos M. Ortiz Marrero* (carlos.ortizmarrero@pnnl.gov). *Data-Driven State Space Discovery of Physical and Chemical Systems*. Preliminary report.

What is "scientific machine learning"? We will address this question by exploring various data-driven problems that arise in chemistry and engineering. In particular, we will present results related to state space reconstruction using delay embeddings, forecasting using domain-aware models, and state estimation using physics-informed neural networks. Moreover, we will highlight some key mathematical aspects that are driving further progress in the field. (Received September 17, 2019)