

Exploring Dark Matter Shadows with AI

Wednesday, 25 May 2022 08:30 (23 minutes)

Transit spectroscopy is the primary tool for inferring the physical parameters and the atmospheric chemical composition of extrasolar planets. I will discuss some recently proposed AI-inspired techniques for exoplanet parameter retrievals, including dimensional analysis, vector component analysis, exploratory data analysis, feature engineering, dimensionality reduction and manifold learning, clustering, anomaly detection and visualization. I will also draw analogies to the corresponding simulation and data analysis chain in high energy physics.

Primary author: MATCHEV, Konstantin (University of Florida (US))

Co-authors: MATCHEVA, Katia (University of Florida); ROMAN, Alex (University of Florida)

Presenter: MATCHEV, Konstantin (University of Florida (US))

Session Classification: Machine Learning, Neutrino