Argonne NATIONAL LABORATORY

PHY Seminar

Physics Division Seminar

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Machine Learning in Fundamental Nuclear Physics Research

Host: Calem Hoffman

Monday, January 20, 2020 – 203, R150, 3:30 PM

Machine learning has become ubiquitous in data-rich applications. Fundamental physics research provides an exciting realm for machine learning research with applications ranging from experimental data acquisition through making theoretical predictions. This talk will step through machine learning theory starting with logistic regression and ending with Generative Adversarial Networks, highlighting applications in low through high energy nuclear physics research. Specifically, I will focus on applications at the Facility for Rare Isotope Beams, Thomas Jefferson National Accelerator Facility, and the future Electron-Ion Collider. I will highlight areas where current machine learning can improve for scientific applications, providing a rich environment for the advancement of both physics and machine learning research.