



Physics Colloquium



Tuesday, October 15, 2019, 3:30PM in SC 10

Prof. KC Kong

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Mathematics, Particle Physics and Machine Learning

Our knowledge of the fundamental particles of nature and their interactions is summarized by the standard model of particle physics. Mathematically, the theory describes these forces and particles as the dynamics of elegant geometric objects called Lie groups and fiber bundles. Now advancing our understanding in this field has required experiments that operate at higher energies and intensities, which produce extremely large and information-rich data samples. The use of machine-learning techniques is revolutionizing how we interpret these data samples, greatly increasing the discovery potential of present and future experiments. In this talk, I will provide a brief overview of the standard model, and discuss how to search for new physics beyond the standard model with a specific example using neural networks.

Refreshments at 3:00PM in SC 103