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Classifying importance regions in Monte Carlo simulations with machine learning

Wednesday, 10 July 2024 11:00 (20 minutes)

In this work, we attempt to classify regions in a multidimensional parameter space according to their importance during a simulation. Considering that the parameter space could be high dimensional and the simulated process could result in arbitrary shapes, we involve a neural network in the process of guessing such shapes without running the full simulation for every point. We illustrate the process with a few examples, including scattering processes with several outgoing particles and compare with other known techniques for Monte Carlo simulations.

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Primary authors: Dr BAN, Kayoung (Korea Institute for Advanced Study); Prof. PARK, Myeonghun (Seoultech); RAMOS, Raymundo (Korea Institute for Advanced Study)

Presenter: RAMOS, Raymundo (Korea Institute for Advanced Study)

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