Seminar, Department of Physical Sciences, Bose Institute, Kolkata

Some applications of Machine Learning techniques in relativistic heavy ion collisions

Prof. Soma Sanyal (University of Hyderabad)

Abstract: In this talk, I plan to discuss how various Machine Learning (ML) techniques can be used to improve the accuracies of the observables in relativistic heavy ion collisions. Starting with improving the accuracy of prediction of several geometrical parameters, we move onto other variables where the background obscures the expected signal. One of these is the Chiral Magnetic Effect. As is well known, the detection of the Chiral Magnetic Effect remains a concern due to the large background. The application of the Deep Neural Network formalism may help us in improving this signal to a great extent. The Chiral Magnetic effect itself being a macroscopic quantum phenomenon, it's unambiguous detection would have profound impact not only on the field of heavy ion collision and nuclear physics but also on the understanding of some condensed matter systems.

Date/time: January 19, 2026 (Monday) at 15:00 PM

Venue: Room 204, Physics Seminar Room, (Second floor, UAC, BI)