

D. P. Roy Memorial Lecture 2023

Professor Durga Prasad Roy (1941-2017) was a pioneer in the field of particle physics in India, especially in the physics of High energy colliding beam machines. He worked at TIFR for more than four decades. This is the fourth of a series of Memorial Lectures made possible by the generosity of Dr. Manika Roy and the family of the late Prof. Roy.



Particle physics at the crossroads

Professor Csaba Csaki

Cornell University

Monday January 16th, 2023, at 4:00 pm,

Venue - Homi Bhabha Auditorium

Zoom: 915 4962 8404

Live Webcast - https://youtu.be/r_LsQ5Nw0NI

Particle physics had a triumphant march since the 1950's, which culminated in the discovery of the Higgs boson in 2012 at the LHC in Geneva, Switzerland. Our current picture of fundamental particles and their interactions, the Standard Model, explains all collider experiments performed to date, providing the most quantitatively accurate predictions in the history of science. This remarkable success puts particle physics in an unusual situation. Should we still expect new particle physics discoveries or did we already learn everything we could? What would be the signals of potential new physics? Conversely, what would be the implications if there were no more discoveries? Does it still make sense to build bigger experiments? In general, when should we consider an experiment (for example the LHC) to be successful? I will first review the Standard Model, provide a glimpse of the Higgs boson and why it was important to find it, and finally try to answer some of these fundamental questions that keep particle physicists up at night.



Csaba Csaki, a leading theoretical particle physicist, is currently a professor in Cornell University. Before joining Cornell, Prof. Csaki was a Miller Fellow at UC Berkeley and J. Robert Oppenheimer Fellow at Los Alamos National Laboratory. Among various accolades, he is recently named Simons Fellow.