



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Theoretical Sciences

27th JUNE, 2022

3.00 PM

ONLINE / FERMION

SPEAKER



Dr. RUPAK MUKHERJEE,

**Associate Research Physicist, Princeton Plasma Physics Laboratory,
Princeton University, USA**

TITLE OF THE TALK

How computational physics is shaping nuclear fusion reactors

ABSTRACT

First, I will brief the status update on nuclear fusion research, worldwide. And then, I will outline the basic physics concept of a nuclear fusion reactor, called Tokamak. I will explain the key physics issue, that is primarily inhibiting the commercialization of nuclear fusion power. We will see, 'edge' of a Tokamak, filled with chaotic magnetic- fields, is precisely the sweet-spot to bring nuclear fusion energy to our commercial electrical power-grids. I will focus on our work - how a group of theoretical physicists, at Princeton, are building ground-up computational technology to find a quantitative solution for this rapidly emerging nuclear fusion industry!

HOST FACULTY

Dr. Manik Banik and Dr. Sunandan Gangopadhyay

DEPT. OF THEORETICAL SCIENCES
