

Speaker: Subrata Kundu

Title: Understanding Earthquake Dynamics and Their Effects in the Ionosphere

Abstract:

Earthquakes, one of the most catastrophic natural phenomena, exhibit a profound influence not only on the Earth's surface but also on its atmosphere, particularly in the ionospheric region. Understanding the Earth's interior is fundamental in explaining the mechanisms behind earthquake generation. Seismic waves travel through various layers of the Earth, carrying valuable information about its composition, structure, and dynamics. Moreover, earthquakes induce perturbations in the ionosphere, the uppermost layer of the Earth's atmosphere, primarily through the generation of acoustic and gravity waves. The atmospheric density oscillates during the propagation of these wave disturbances and generate ionospheric disturbances through ion-neutral collisions. These ionospheric disturbances are commonly termed as co-seismic ionospheric perturbations (CIP). The Total electron content (TEC) is one of the major tool to investigate CIP. The TEC is computed by using the Global Navigation Satellite system data. In this talk, I discuss about the Earth's interior, mechanism of the earthquake and the coupling between the lithosphere and ionosphere during the earthquakes.