

Tata Institute of Fundamental Research

*Cordially invites you to attend the **Public Lecture***

“Atmospheric neutrino oscillations”

by

Prof. Takaaki Kajita, Nobel Laureate

As part of the

**21st International Symposium on Very High Energy
Cosmic Ray Interactions - ISVHECRI 2022**



Date : 24 May 2022

Time : 18:00 hrs (IST)

YouTube Link : <https://youtu.be/IZKml1njE-8>

Live Telecast : AG-66, Tata Institute of Fundamental Research

Prof. Takaaki Kajita was awarded the prestigious TIFR-IUPAP Homi Bhabha Medal and Prize in 2019 for his outstanding contributions in the discovery of neutrino oscillations and other path-breaking contributions in the field of Astroparticle physics. He discovered that the theoretical models could not explain the ratio of atmospheric muon neutrino to electron neutrino events in the Kamiokande experiment. He pioneered the development of particle identification in water by Cherenkov ring imaging technique, which led to the discovery of neutrinos oscillations. This was an unexpected, and possibly the greatest discovery of the past half-century, as evidenced by the award of Nobel Prize in 2015. This discovery had a huge impact on our understanding of cosmology, cosmic ray and particle physics, and opened doors in many other scientific fields. This lecture coincides with the 21st International Symposium on Very High Energy Cosmic Ray Interactions (ISVHECRI-2022) which is being organised by the members of the GRAPES-3 collaboration of TIFR.

Abstract:

Neutrinos have been assumed to have no mass. It was predicted that, if neutrinos have masses, they could change their type while they propagate, which is called neutrino oscillations. Neutrino oscillation was discovered by the Super-Kamiokande experiments by studying neutrinos produced by cosmic ray interactions in the atmosphere. I will describe the discovery of neutrino oscillations. The implications of the discovery of the neutrino oscillations and the future prospects for neutrino experiments will also be discussed.

