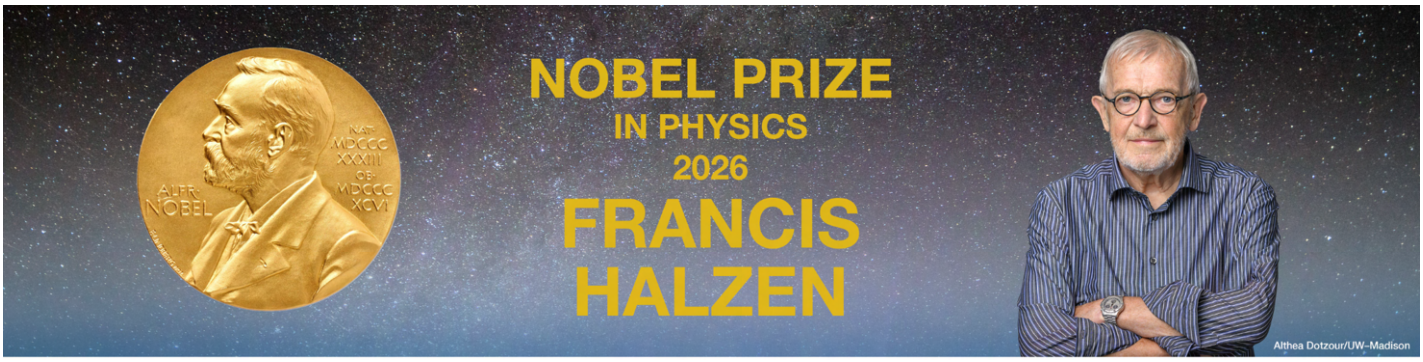
INSTITUTE OF PHYSICS, BHUBANESWAR

CELEBRATING THE 2026 NOBEL PRIZE IN PHYSICS

From Ghost Particles to Cosmic Messengers

A one-day pedagogical symposium on neutrinos, IceCube and the new era of neutrino astronomy



MONDAY, 30 NOVEMBER 2026 • 9:00 AM - 5:00 PM

Prof. T. Pradhan Lecture Hall, Block A, Institute of Physics, Bhubaneswar

SCIENTIFIC PROGRAMME

09:00 - 09:30	Registration and interaction
09:30 - 09:45	Welcome address and introduction to the Nobel celebration
09:45 - 10:30	**Lecture I | Neutrinos: the ghost particles that changed physics**
10:30 - 11:00	Tea/Coffee break
11:00 - 12:00	**Lecture II | IceCube: the South Pole telescope and the 2026 Nobel Prize**
12:00 - 12:30	Open discussion | How can we observe the Universe with neutrinos?
12:30 - 14:00	Lunch and informal interaction
14:00 - 15:00	**Lecture III | Discoveries from IceCube: cosmic neutrinos and their sources**
15:00 - 15:30	Tea/Coffee break
15:30 - 16:15	**Lecture IV | The future of neutrino astronomy and IOP's contributions**
16:15 - 16:45	Interactive discussion | New frontiers and opportunities for young researchers
16:45 - 17:00	Vote of thanks and group photograph

Participants: Students, research scholars, postdocs, and faculty across physics and allied disciplines

Contact: Prof. Sanjib Kumar Agarwalla and the IOP Neutrino Group, sanjib@iopb.res.in, +91 9178845656

THE 2026 NOBEL PRIZE IN PHYSICS

Celebrating Prof. Halzen's contribution & IceCube's role in opening a new window onto the Universe

IceCube Neutrino Observatory at the South Pole

The Royal Swedish Academy of Sciences awarded the 2026 Nobel Prize in Physics to Professor Francis Halzen of the University of Wisconsin-Madison "for decisive contributions to the IceCube Neutrino Observatory and the discovery of high-energy neutrinos of astrophysical origin." This recognition celebrates a bold scientific vision: transforming the deep Antarctic ice into an extraordinary telescope to explore the high-energy Universe.

NEUTRINOS: A NEW COSMIC MESSENGER

Neutrinos are exceptionally elusive particles that can travel across vast cosmic distances with little deflection or absorption. IceCube detects the faint Cherenkov light emitted by charged particles produced when neutrinos interact in the ice. Its discovery of a diffuse flux of high-energy astrophysical neutrinos established a new observational window on the cosmos. Subsequent results have provided evidence connecting neutrinos to the blazar TXS 0506+056 and the active galaxy NGC 1068, as well as neutrino emission from the plane of our Milky Way. Together with electromagnetic and gravitational-wave observations, these findings are advancing multi-messenger astronomy.

A SPECIAL CONNECTION WITH THE INSTITUTE OF PHYSICS

The celebration is particularly significant for the Institute of Physics, Bhubaneswar. Prof. Sanjib Kumar Agarwalla worked closely with Prof. Halzen during his Fulbright-Nehru fellowship at UW-Madison, and his research group continues to engage with the IceCube Collaboration. This association connects researchers and students at IOP with an international scientific enterprise at the forefront of neutrino physics and astrophysics.

The IOP neutrino group studies atmospheric neutrino oscillations and the physics reach of IceCube DeepCore and the IceCube Upgrade. Its research also explores Earth's neutrino tomography, an emerging interface between particle physics and geoscience, and uses publicly available DeepCore data to test possible physics beyond the Standard Model, including non-standard interactions, long-range interactions, and non-unitary neutrino mixing. These activities illustrate how IceCube enables discoveries not only about distant cosmic accelerators but also about fundamental particles and the interior of our own planet.

INSPIRING THE NEXT GENERATION

Through four accessible talks and interactive discussions, this one-day programme aims to introduce students, scholars and faculty from diverse disciplines to the science behind the Nobel Prize, IceCube's remarkable achievements, and the opportunities ahead in neutrino astronomy. We warmly celebrate Prof. Halzen's achievement and the collective efforts of the IceCube Collaboration and look forward to the next generation of discoveries and collaborations.

Celebration of the 2026 Nobel Prize in Physics at IOP

We are delighted to host a one-day celebration marking the 2026 Nobel Prize in Physics, awarded to Prof. Francis Halzen (University of Wisconsin-Madison) for his pioneering contributions to the IceCube Neutrino Observatory and for the discovery of high-energy astrophysical neutrinos.

Date: Monday, 30 November 2026
Time: 9:00 AM – 5:00 PM
Venue: Prof. T. Pradhan Lecture Hall, Block-A, IOP Bhubaneswar.

This occasion is particularly special for us, given our close scientific association with Prof. Halzen and our ongoing research activities within the IceCube Collaboration.
The programme will feature four pedagogical talks by members of our neutrino group, covering the fascinating world of neutrinos, IceCube's landmark discoveries, the emergence of neutrino astronomy, and future research opportunities. The lectures are intended for a broad physics audience, including those without prior exposure to neutrino physics.

Apart from invited participation, there will be scope to participate online. Please register using the Google Form link below.

Registration link: https://forms.gle/aKHn9BhvZMtwxPE68

We look forward to your enthusiastic participation as we celebrate this remarkable milestone in neutrino physics and astronomy.