ABOUT THE SPEAKER

Prof. Manindra Agrawal, currently serving as the Director of the Indian Institute of Technology Kanpur, is a renowned computer scientist, globally known for his contributions in Complexity Theory and Cryptography.

He received his BTech and PhD in Computer Science and Engineering from IIT Kanpur in 1986 and 1991, respectively. He later worked as a fellow at the School of Mathematics, SPIC Science Foundation, Chennai, and as a Humboldt Fellow at the University of Ulm, Germany, before joining as a faculty in the Department of Computer Science and Engineering at IIT Kanpur in 1996.

Prof. Agrawal comes with extensive administrative experience. Before joining his alma mater, IIT Kanpur, as the Director in April 2024, Prof. Agrawal served in several administrative roles at the Institute, including as Head of the Department of Computer Science and Engineering from 2006 to 2010, Dean of Resource Planning and Generation from 2011 to 2012, Dean of Faculty Affairs from 2013-2015, and as Deputy Director from 2017-2019. He was also the Project Director at C3iHub - A Cybersecurity Technology Innovation Hub at IIT Kanpur from 2020-2024.

Prof. Agrawal has numerous accomplishments, including the development of the AKS Primality Test -the first unconditional deterministic algorithm to test an n-digit number for primality in a time that is proven to be polynomial in n. He has received multiple national and international honors for his contributions, including the Padma Shri Award, the Shanti Swarup Bhatnagar Award, the coveted Gödel Prize, the Fulkerson Prize, and the first Infosys Prize for Mathematics, among others. Prof. Agrawal is a foreign associate of the US National Academy of Sciences, a fellow of The World Academy of Sciences, and a fellow of all the three Indian Science Academies, namely, the Indian National Science Academy, Indian Academy of Sciences, and The National Academy of Sciences, and also a fellow of the Indian National Academy of Engineering.

Saha Institute of Nuclear Physics Alumni Association

Cordially invites you to attend the

5TH PROFESSOR MANOJ KUMAR PAL MEMORIAL LECTURE

on

Why is Covid Not Coming Back? A Mathematical Analysis

by

Professor Manindra Agrawal
Director
Indian Institute of Technology, Kanpur

Venue
Meghnad Saha Auditorium
Saha Institute of Nuclear Physics, Kolkata

NOVEMBER 11, 2025
at 3.00 pm

Organised by
Saha Institute of Nuclear Physics Alumni Association
(SINPAA)
SINP, Kolkata

Born: 26 October, 1932; Died: 3 March, 2016

The lecture honours the legacy of Prof. Manoj Kumar Pal (1932 – 2016), a renowned nuclear physicist who contributed significantly to the modern development of theoretical nuclear physics. Professor Pal was a highly distinguished nuclear physicist of our times. A profound thinker, he played a pioneering role in the growth of theoretical nuclear physics in India. He bridged nuclear models and advanced the understanding of nucleonic behaviour, core-polarization, and pairing vibration. His main contribution lies in the decisive role played by him in bridging the apparently disparate nuclear models, the collective and the shell model in the Brueckner-Bethe-Hartree-Fock approach. In this game, he contributed extensively to the microscopic understanding of the nucleonic behaviour in the nucleus and their correlations, core-polarization and pairing vibrations in degenerate nuclear systems, finding the fission path from study of the collective potential energy of transitional nuclei and development of the adiabatic time-dependent Hartree-Fock theory. A brilliant teacher and an exceptional mentor to research students, Prof. Pal along with his colleagues built one of the finest schools of theoretical nuclear physics in India in his long academic journey. That is his permanent legacy.

Professor Pal was the Director of the Saha Institute of Nuclear Physics from 1983 till his retirement in 1992. He was a fellow of the Indian National Science Academy, Delhi and fellow of the Indian Academy of Science, Bangalore. He was recipient of M. N. Saha Gold Medal from the Asiatic Society, Kolkata. He wrote books on both the Special and General Theory of Relativity and an advanced textbook titled *Theory of Nuclear Structure* which is widely used by practitioners of nuclear physics worldwide. An erudite scholar in many disciplines, he published a historical novel titled *Forever Free* and a book entitled *Old Wisdom and New Horizon* on science, religion and philosophy.

Why is Covid Not Coming Back? A Mathematical Analysis

ABSTRACT

Covid-19 pandemic ended in India in March 2022 after the Omicron wave. After that, four instances when the number of cases started rising only to taper off quickly and come down again. Moreover, these instances were separated by about a year each. Why have we not seen another major wave? And why are the four ripples evenly spaced? Is it because of immunity developed through vaccination? In this talk, we attempt to provide answers to these questions by developing a deeper understanding of the pandemic and its impact worldwide. The tool we will use for this is a mathematical model called SUTRA.

PROGRAMME

Welcome Address
Prof Rupayan Bhattacharya
President, SINPAA

Address by the Guest of Honour
Professor Gautam Bhattacharyya
Director, SINP

M K Pal Memorial Lecture
Professor Manindra Agrawal
Presentation of memento
Vote of thanks