Indian Institute of Space Science and Technology

Valiamala, Thiruvananthapuram - 695 547, Kerala

# A MODEL OF TRANSIENCE AND FREEZING: MANY SOKOBANS ON A LINE

A Colloquium by

**Prof. Deepak Dhar**

ICTS, Bangalore

**03:30 PM** | **15 OCTOBER 2025** | **IIST Council Hall**

The talk will discuss a toy model of many interacting diffusing particles in a disordered medium. The model is inspired by a video game. In this game, there is a storehouse, represented by a square grid of sites. In this storehouse, there are placed several agents called 'sokobans' (store-keeper in Japanese), which can moved along the grid by the player, by using a joystick. The store also has some boxes put on some sites of the grid. A sokoban can push a box to another site in its direction of motion, but only if the next site is empty. There is also the hatd-core constraint that a site can have only one sokoban, or a box, or be empty.v

**About the speaker:** Prof. Deepak Dhar is an eminent Indian theoretical physicist renowned for his contributions to statistical physics. An alumnus of IIT Kanpur and Caltech, USA, he spent most of his research career at TIFR, Mumbai, and is currently an INSA Distinguished Professor at the International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru.

Prof. Dhar has received numerous prestigious awards, including the Shanti Swarup Bhatnagar Prize for Science and Technology (1991), the J. Robert Schrieffer Prize (1993), and the Satyendra Nath Bose Medal (2001). He is an elected fellow of all three major Indian science academies - IASc, INSA, and NASI. In 2022, he became the first Indian to receive the Boltzmann Medal, the highest honor in statistical physics. In recognition of his outstanding contributions to science, he was conferred the Padma Bhushan in 2023.

Live Stream: https://tinyurl.com/2p8c4wmx