



# INDIAN INSTITUTE OF SCIENCE INSTITUTE COLLOQUIUM

DIVISION OF MECHANICAL SCIENCES

## OPTIMAL GUIDANCE FOR NATIONAL SPACE MISSIONS

### ABSTRACT:

In this colloquium, two different optimal guidance that are developed in-house and relevant to national space missions will be discussed in fair detail. These include (i) Minimum-jerk guidance or Lunar soft-landing of Vikram lander in connection with the Chandrayaan-3 mission, including its extended applicability of soft-landing of drones and (ii) Impulsive MPSP guidance for long-duration station-keeping of Aditya L1 satellite in the unstable Halo orbit, as well as docking of satellites in the upcoming SPADEX mission. The relevance of optimal guidance for recovery of launch vehicles via pin-point vertical soft-landing, work for which is going to be initiated soon, will also be outlined in this talk.

29 AUG, 2023  
4:00 P.M.

FACULTY HALL,  
MAIN BUILDING

PROF. GOVINDAN RANGARAJAN  
DIRECTOR, IISC  
WILL PRESIDE

HIGH TEA: 5:00 P.M.



### ABOUT THE SPEAKER



Prof. Radhakant Padhi  
HAL Chair Professor  
Dept. of Aerospace Engineering  
IISc, Bangalore

Prof. Radhakant Padhi is currently working as the HAL Chair Professor in the Department of Aerospace engineering and also as an Associate Faculty at the Centre for Cyber-Physical Systems, Indian Institute of Science, Bangalore. He is a Fellow of Indian National Academy of Engineering, Aeronautical Society of India, Astronautical Society of India, IETE, and Institute of Engineers India. He is an Associate Fellow of AIAA and a Senior Member of Institute of IEEE.

Prof. Padhi's research interest is on optimal and nonlinear control synthesis algorithms and their applications to challenging practical problems in aerospace, biomedical and mechanical engineering. He is a member of technical review committees for several missions of ISRO and DRDO.



ALL ARE WELCOME