



ट्रॉम्बे वार्तालाप

जुलाई-अगस्त '26

Trombay Colloquia

Jul-Aug '26



Future is Incredibly Exciting at CERN

What Next at CERN?

- What is the unknown 95% of universe's mass?
- Why it is made only of matter with hardly any anti-matter?
- Does Higgs Boson interact with the Dark Matter?
- Is Higgs Boson a fundamental particle?
- Why is gravity so weak?

Big Projects

- Future Circular Collider (FCC)-91 km ring
- Capital Outlay: 15 billion Swiss Francs
- Targeted year of operations: 2045-48

Recent Achievements

- For the Large Hadron Collider, 2025 was a record-breaking year
- ATLAS & CMS data for 2025 stands at 125fb^{-1} ; Total so far is 520fb^{-1}
- There's a profound discovery in every 5 years at CERN
- Publications on LHS Experiments reached ~ 4000
- 1500 petabytes of CERN data stored world-wide

Prof. Thomson's visit to BARC, Mumbai on August 31, 2026 was second during his career and first after he assumed charge as CERN's Director General in January 2026. He delivered a talk entitled 'Particle Physics - Today & Tomorrow' at Trombay Colloquium.

Professor Mark Thomson
Director General
European Organisation for Nuclear Research (CERN)

2026

08
July



50 Years of Solar in India

Achievements and Challenges

India's Solar Future Bright

2026 is the golden jubilee year for Solar Energy in India

The country will be 2nd/3rd largest deployer of solar energy capacity globally in the next decade

On track to meet COP26 target of having 50% electrical capacity for non-fossil sources by 2030

Deployment Challenges & Potential Threats

Land availability and acquisition can be a problem

Solar needs 5-7 acre per MW

Module deployment takes 12-18 months whereas transmission, line planning & execution takes 3-5 years

Cyber security of solar grid is an interesting area of study.

One way to overcome this potential problem is to manufacture more locally with in-house technology

Prof. Juzer Vasi
Professor Emeritus
IIT Bombay

LIGO-India

*The First AI controlled, quantum enhanced
Gravitational Wave Detector*

LIGO and India

International LIGO draws significant advantages from adding India to the detector network

LIGO Global Network of Detectors : 2 in the US, one each in Italy, Japan and India

LIGO-India Phase I slated for completion in 2033

Hard Scientific Problems in LIGO-India

The technology of ultra-high vacuum tubes functioning at 10⁻⁹ mbar is non-existent in India

Ultra-low noise interferometry expertise for measurement exists only in select S&T communities

People who could do this is not even handful

Prof. Rana Adhikari
Professor of Physics
California Institute of Technology, USA

2026

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