

# HEP Group @ IIT Mandi

## The Group:

- **Amal Sarkar** [STAR, ALICE, CMS, EIC] and **Prabhakar Palni** [CDF, SPiRIT, ALICE, ATLAS, EIC]
- Have experience working in major Particle and Heavy Ion physics experiments: CMS, ATLAS, CDF, ALICE, and STAR
- Currently, in the group 6 PhD, 2 iPhD, 1 Project Associate, 6 masters and 2 B.Tech students are working. 4-6 PG (M.Sc Physics) students / year can join the group for a duration of one year.
- Also in the process of building the basic setup for Micro Pattern Gaseous Detector (MPGD) and Low Gain Avalanche Detector (LGAD) R&D in the Laboratory. Developing facilities like clean room, characterization and mechanical room.

## Interest:

### Physics and Software interest:

- Physics data analyses (related to particle or/and heavy ion physics). MC data production and Analysis.
- Software development and Data reconstruction: Participate in the software development and reconstruction of data

### Detector development:

- MPGD [GEM/THGEM] and Silicon (AC-LGAD) based detector development [detector R&D, detector simulations, testing, quality assurance, commissioning and operations]. Particularly interested in the PID & Tracking detector

## Facilities:

- **Centre For Design & Fabrication of Electronic Devices (C4DFED)** [21 fabrication instruments]: Center has class 100, Class 1000 & Class 10000 laboratories
- **Advanced Material Research Center (AMRC)**: Instrumentation facility, housing more than 46 ancillary equipment
- **Computing Facilities**: Supercomputer PARAM Himalaya & High Performance Computing (HPC) Cluster facility
- **Centre for Artificial Intelligence and Robotics (CAIR)**
- **Mechanical and Electrical workshop**