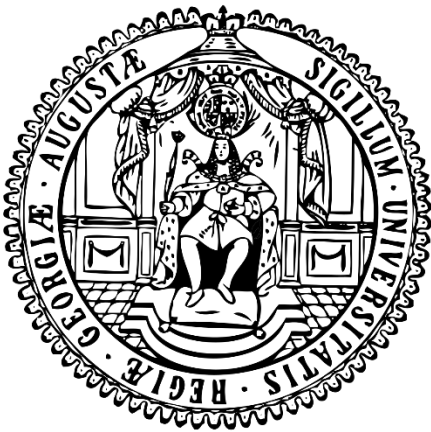
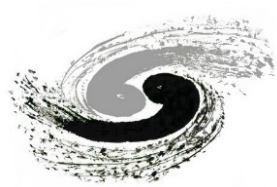


Discussions towards DRD TF6

Yong Liu (IHEP)

March 31, 2023

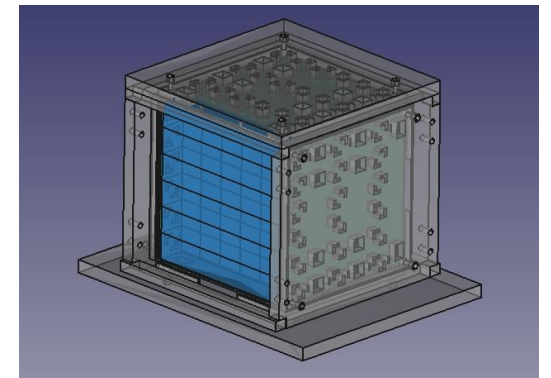
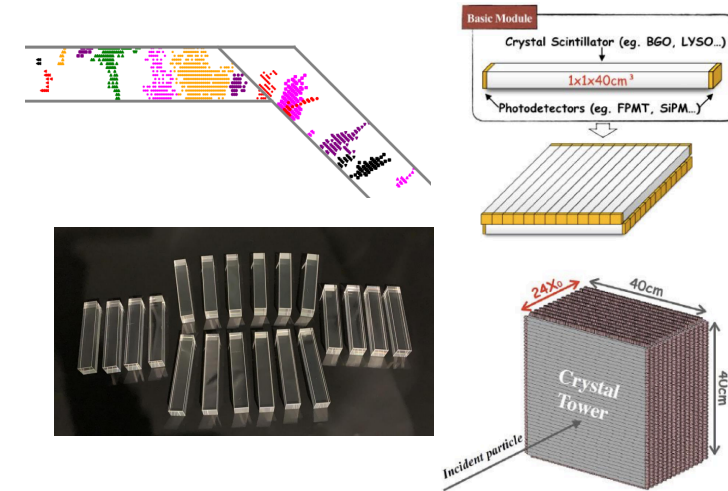


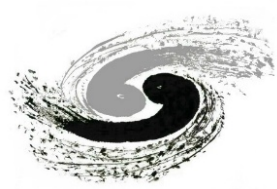


Highly granular crystal calorimeter (Track 3)

- Motivations
 - Optimal EM resolution + PFA capability
- R&D items in 3-5 years
 - Evaluation of physics benchmark performance with jets
 - New PFA features for crystals with better energy and timing precisions
 - New reconstruction software for long-bar configuration
 - EM modules (ongoing) and large-scale prototype (further funding required)
 - FE electronics: low-power, large dynamic range, high readout rate, fast timing
 - Light-weighted mechanics + cooling
- Milestones
 - Key performance parameters: EM/hadronic response linearity and resolution
 - Identified key questions at system level: mechanics, assembly and calibration schemes
- Institutions: currently involved
 - IHEP, SJTU/TDLI, SIC-CAS

Synergies with TF6 Track 1





AHCAL with glass scintillator tiles (Track 1)

- Motivations
 - PFA capability + enhanced hadronic resolution
- R&D items in 3-5 years
 - New glass scintillator for high density, high light yield and transparency, low cost
 - A full setup for comprehensive characterisations of glass tiles
 - FE electronics: low-power, moderate dynamic range, high readout rate, fast timing
 - Prototyping, followed by beamtests (further funding required)
 - Evaluation of physics benchmark performance with jets
 - New PFA features for glass scintillator with better energy and timing precisions
- Milestones
 - Hadronic performance with single hadrons and jets
 - Production of glass tiles in cm-scale that meet the required properties
 - Identified key questions at system level: mechanics, assembly and calibration schemes
- Institutions: currently involved
 - IHEP, universities in China on Glass Scintillator R&D (GS Collaboration), SIC-CAS

Synergies with TF6 Track 3

