Interests from an alliance of Chinese groups

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On behalf of several institutes in China

Recent activities in China regarding EIC

- **Bi-weekly meeting since June with experts from several institutes**

Central China Normal University (CCNU)
Fudan University (FU)
Institute of Modern Physics (IMP)
Institute of Theoretical Physics (ITP)
Peking University (PKU)
Shandong University (SDU)
South China Normal University (SCNU)
Tsinghua University (THU)
University of Science and Technology of China (USTC)

  - Participants are experienced people from RHIC/LHC/NICA/BESIII experiments
  - Covering discussions related to EIC physics/detectors/accelerator

- **Goal:**
  - Consolidate the expertise and workforce in China
  - Prepare a write-up of EOI from China
  - Get involved in the EIC related activities, especially EIC targeted detector R&D
  - **Funds application next year (2021) from NSFC to support the activities**

Physics interests in terms of theory and data analysis

- **Nucleon structure**
  - Spin structure of proton and neutron
    - ✓Helicity, Spin sum rule, Hyperon spin transfer, etc.
  - TMDs/GPDs
    - ✓Sivers effects
    - ✓GPDs via DVCS and DVMP
  - **Origin of the hadron mass**

- **Nucleus related topics**
  - nPDF and nuclear medium effects
    - ✓Parton energy loss and hadronization in nuclei
    - ✓EMC effects and short range correlations
  - High parton densities and saturation, diffraction

- **Heavy flavor physics**
  - **Quarkonia, exotic states, spectroscopy**

Supports from theorists:
K.T. Chao, F.K. Guo, Z.T. Liang, J.P. Ma, Y.Q. Ma, C. Roberts, X. N. Wang, E.K. Wang, B.W. Xiao, H.X. Xing, J. Zhou, B.S. Zou, etc.

Detector contributions
- in terms of detector and/or electronics R&D

- **Tracking**
  - Vertex Silicon pixel detector (CCNU, IMP)
  - TPC (SDU, THU)
  - Small-strip Thin Gap Chamber (SDU)
  - **MPGD large area detector (USTC, IMP)**
- **PID**
  - DIRC/RICH (USTC, IMP)
  - 20ps-TOF using MRPC (THU, CCNU, IMP)
- **Calorimeter**
  - **EMCal: Shashlyk style, sPHENIX W/SciFi EMCal (FU,SDU, THU, IMP)**
- **Accelerator technology:** Electron Cyclotron Resonance ion source, Ion-cooling (IMP)