Research Activities at NCKU HEP Group

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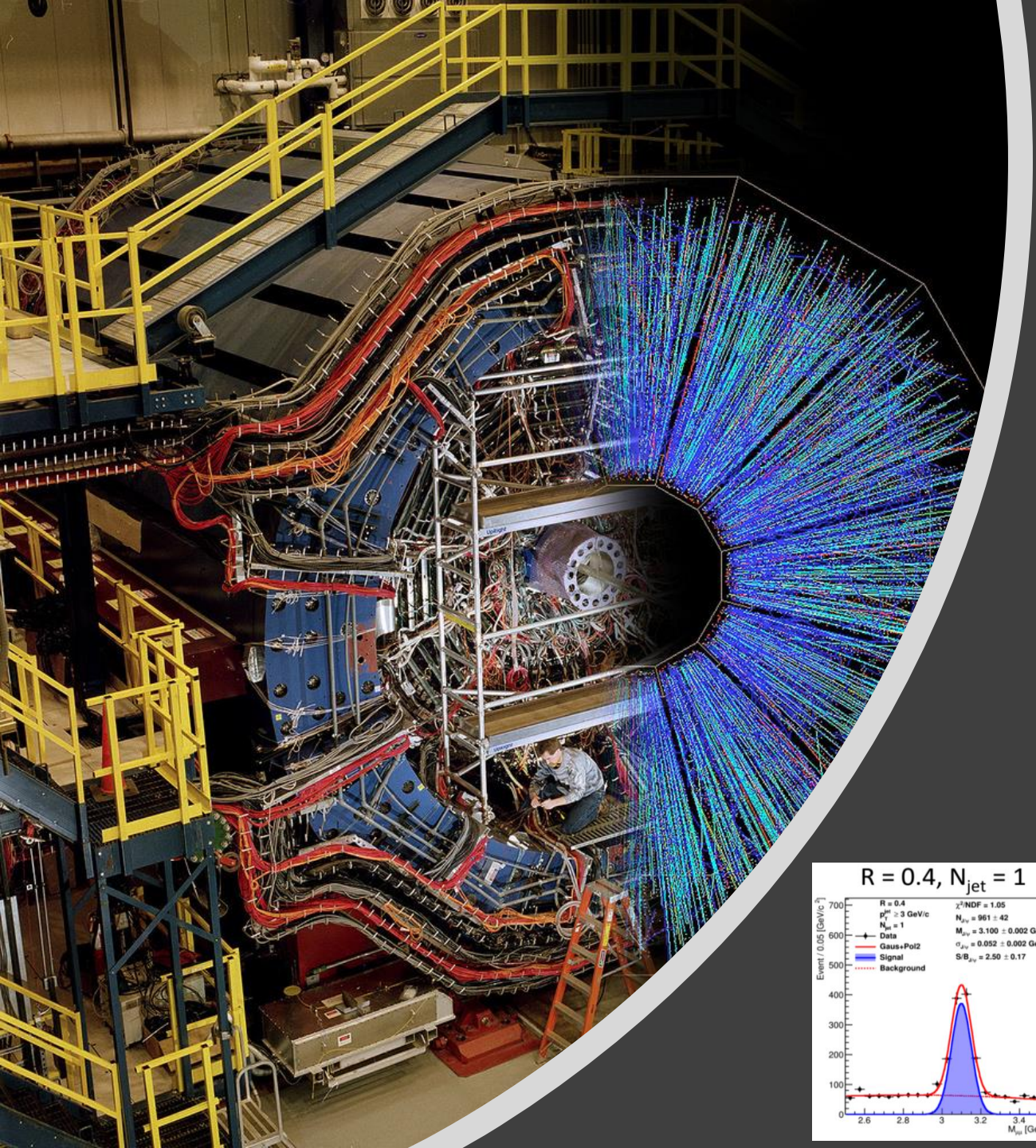
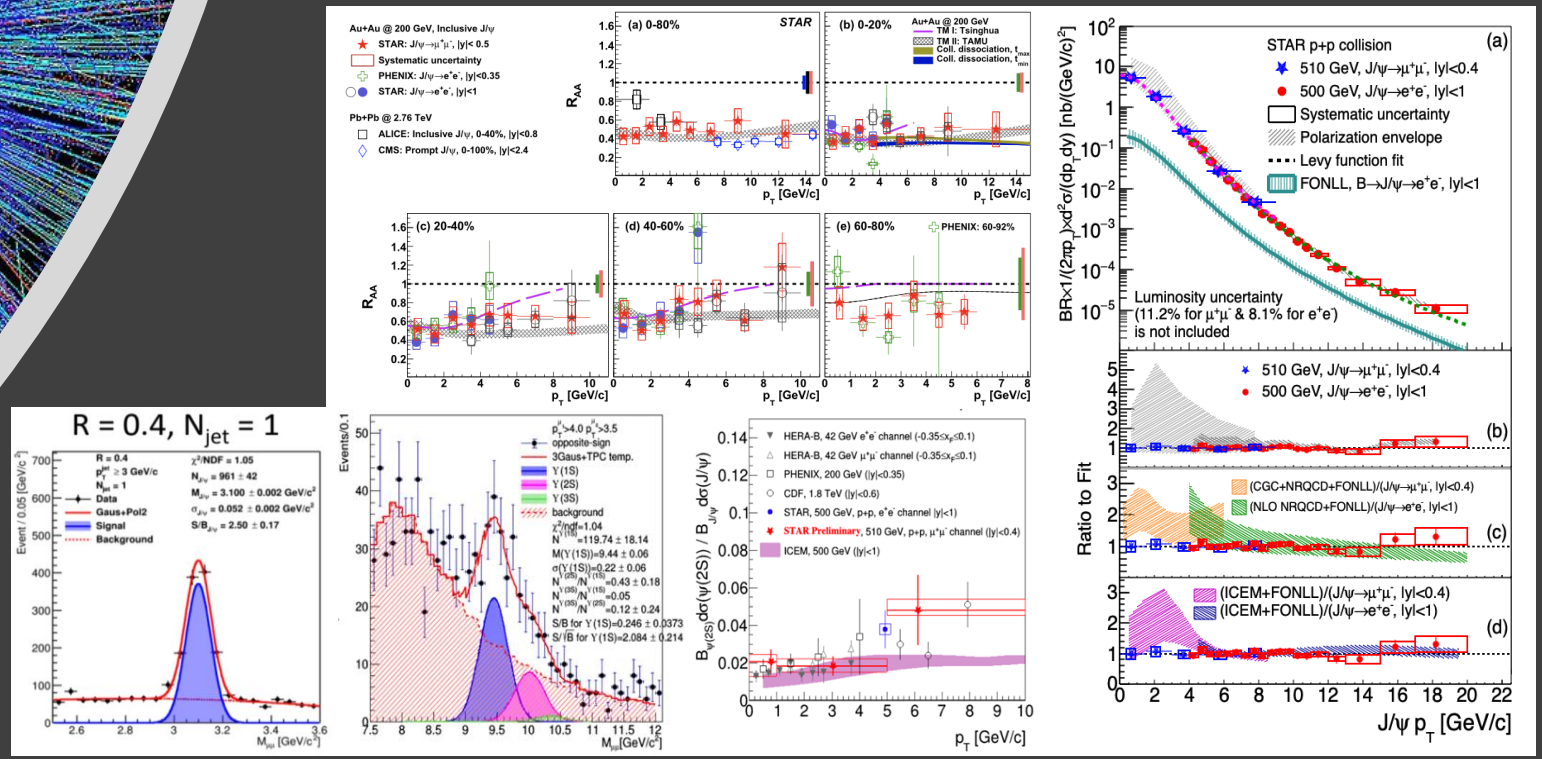
STAR Experiment

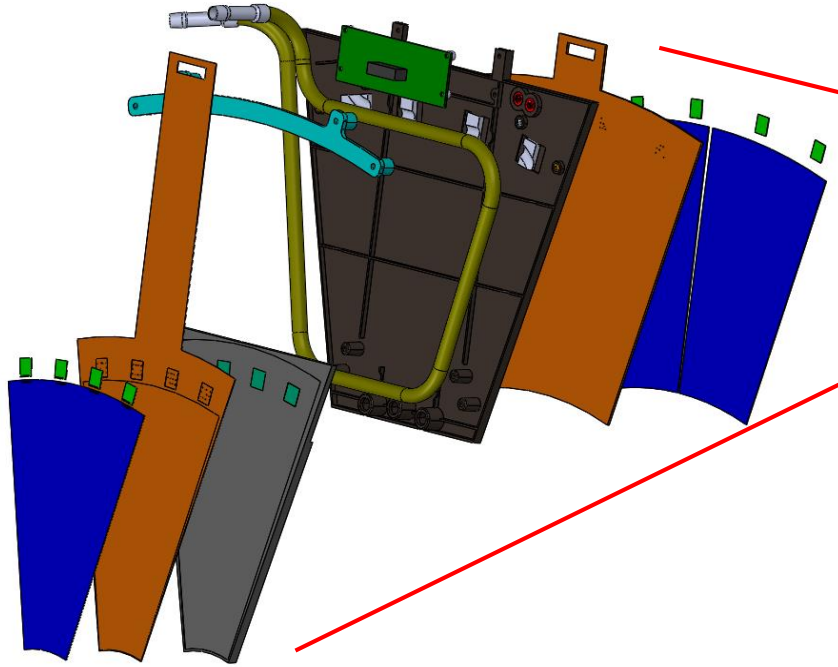
- NCKU HEP group mainly focuses on heavy flavor physics (quarkonium) in both p+p, p+A and A+A collisions
- J/ψ and Υ production, R_{AA}, with jet, v_2, …

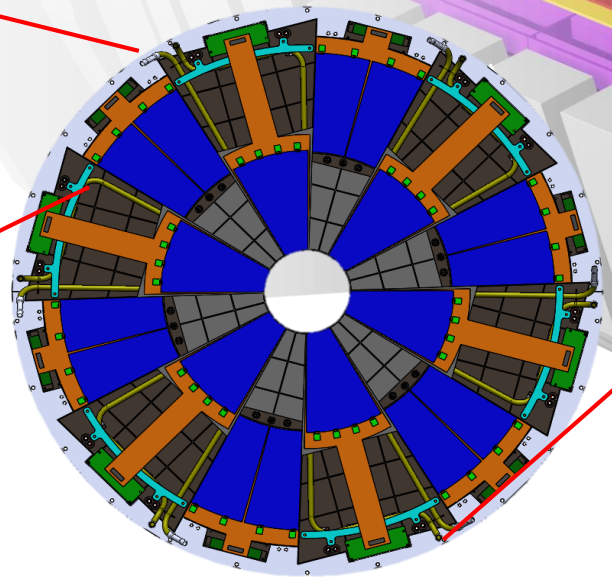


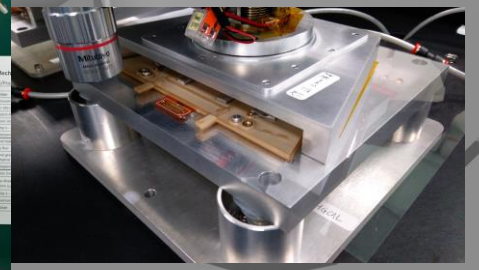


STAR Forward Upgrade

- NCKU is one of the main institutes for the STAR Forward Silicon Tracker upgrade:
  - Design, production of the mechanical structure
  - Tracking simulation
  - Sensor testing

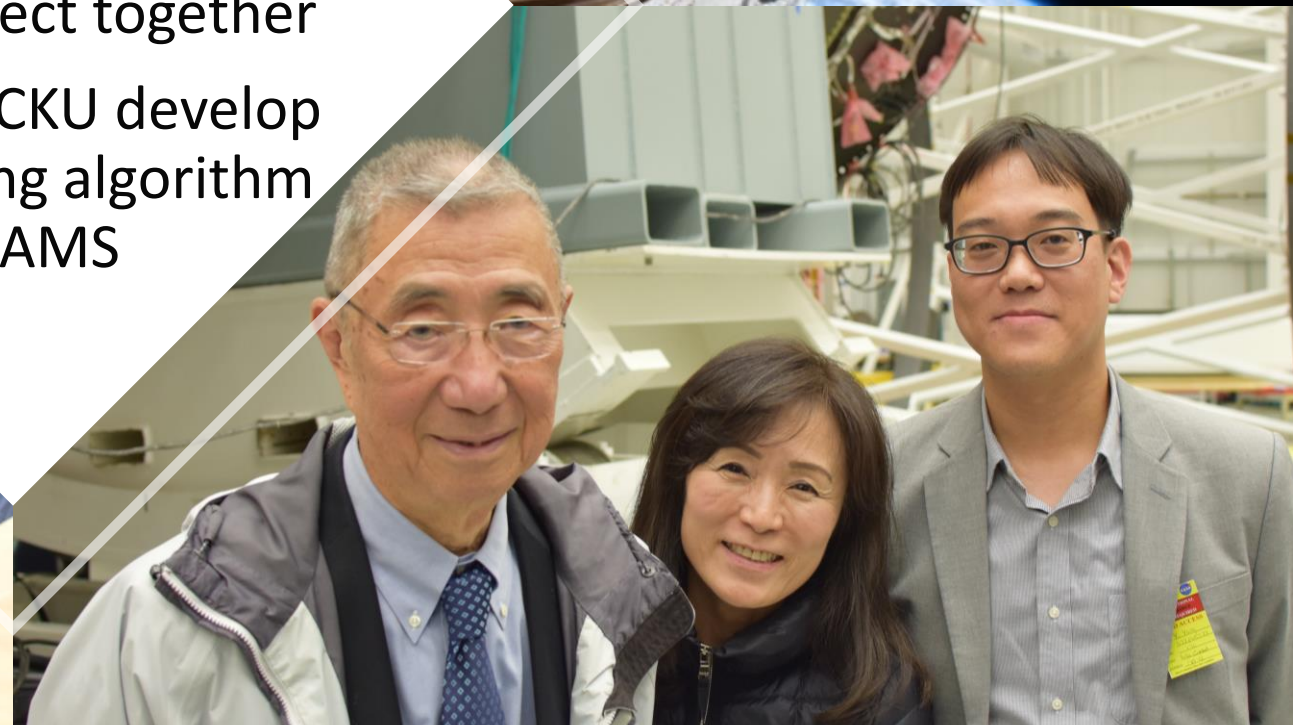






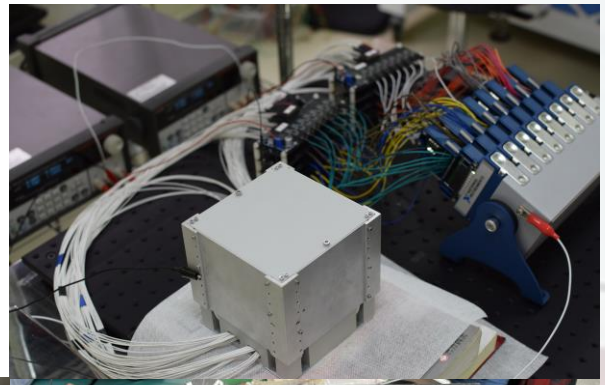
AMS-02

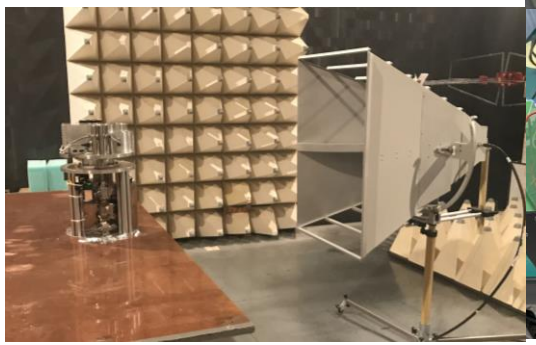
- NCKU and AIDC manufacture the radiator for the AMS-02 UTTPS project together
- NCU and NCKU develop new tracking algorithm for AMS

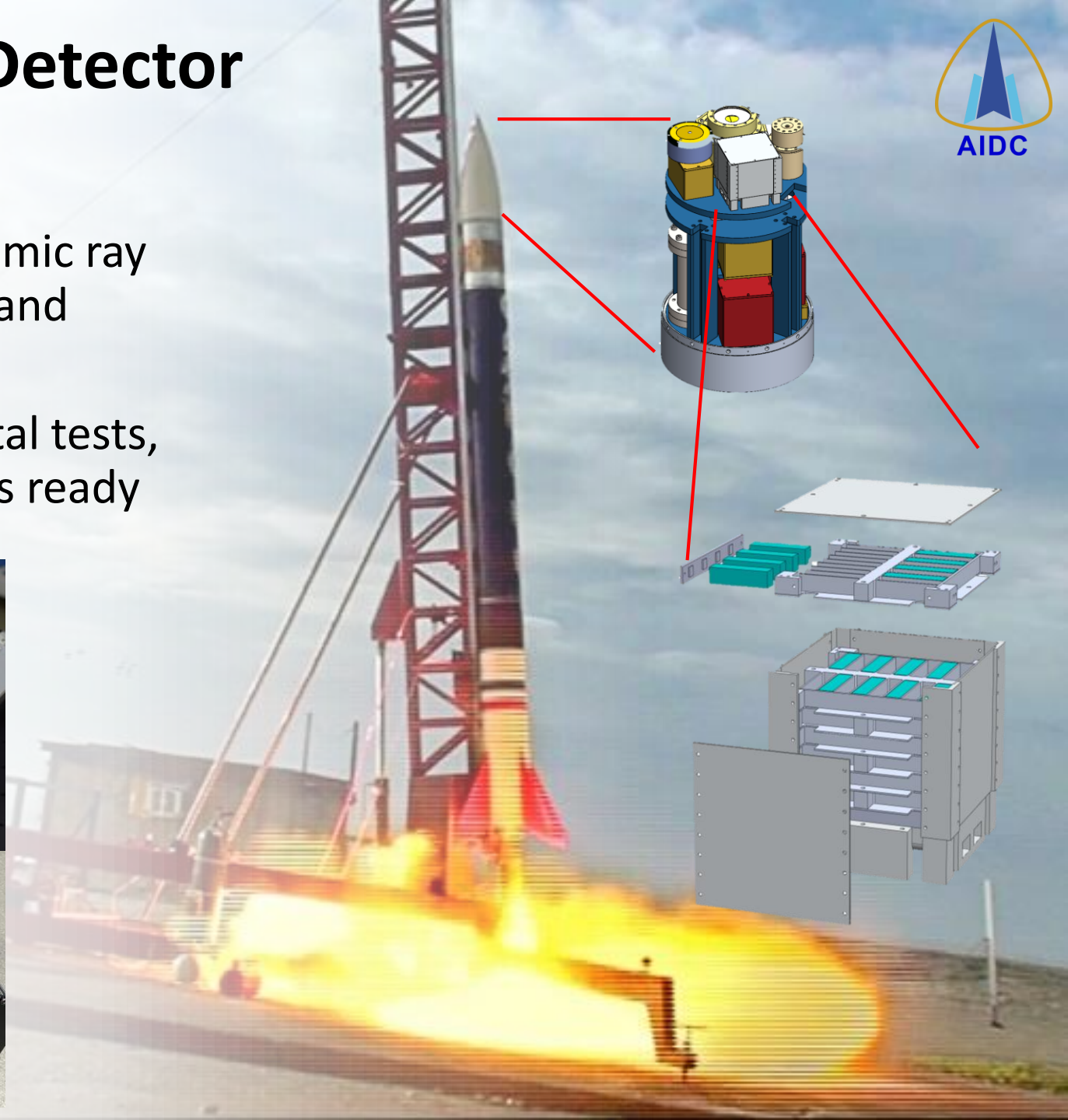


Compact Scintillator Array Detector (ComSAD)

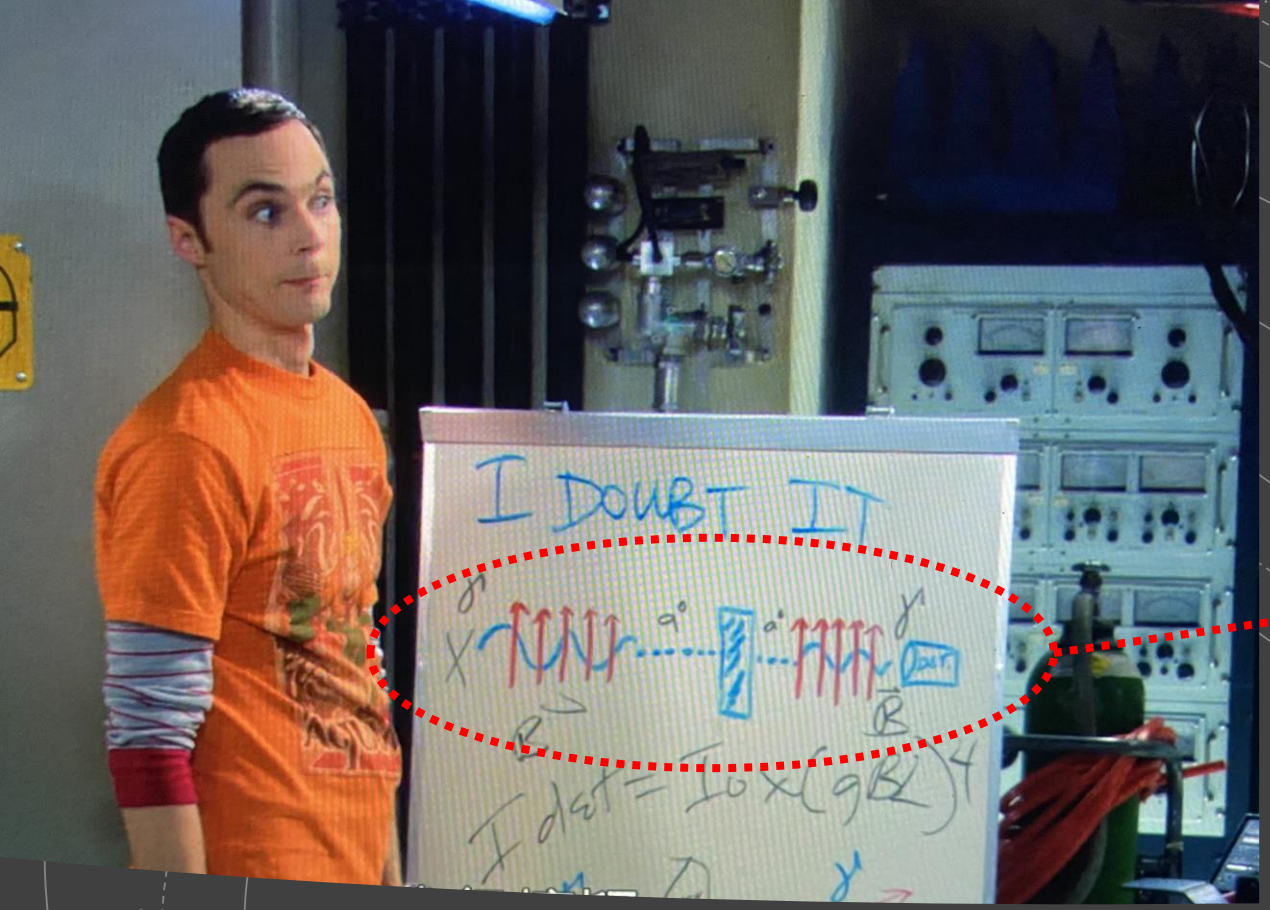
- NCKU developed a scintillator-based cosmic ray detector (ComSAD) for sounding rocket and CubeSat missions
- ComSAD has passed all the environmental tests, including vibration, EMC, and EMI, and is ready for flight







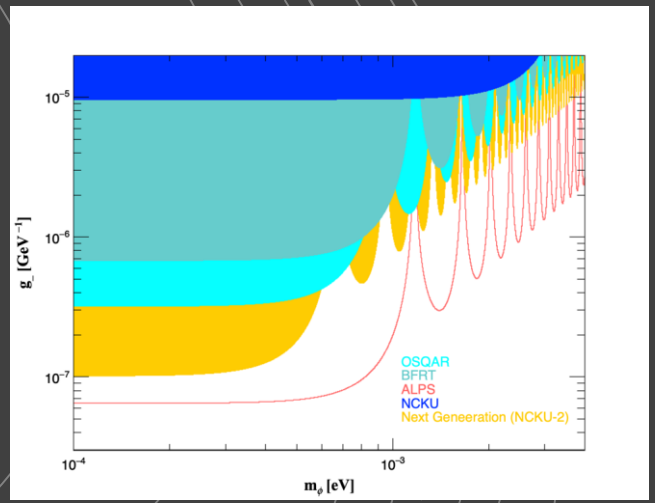
AIDC



Axion

Light-Shining-Through-Walls, LSW

- MOST supported undergrad research project (2019 – 2020)
- Half chamber, vacuum system, laser, and detection sensor are ready
- Expect to start taking data in the summer of 2021



Silicon sensor & Mini cyclotron

- NCKU is developing silicon strip sensor for STAR and toward Low Gain Avalanche Detectors (LGAD) for EIC in the future with TSRI
- NCKU is also building mini cyclotron for multi-purpose