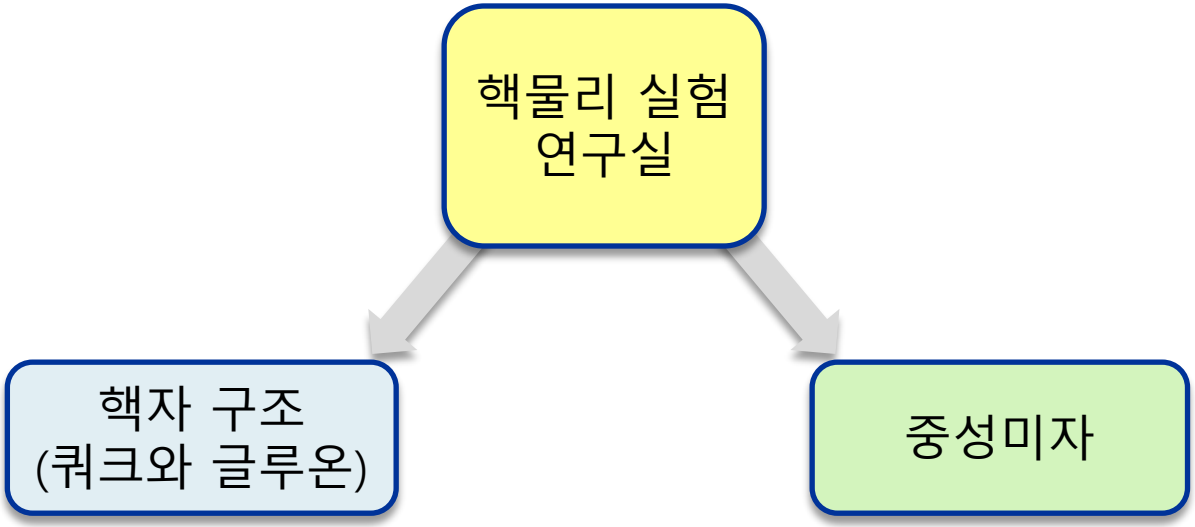
조현석 (Hyon-Suk Jo) 교수 hyonsuk@knu.ac.kr

Room 233



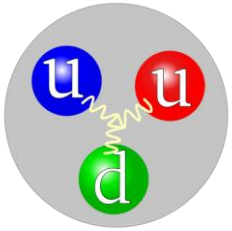
- Jefferson Lab CLAS12, Hall A, Hall C : 미국 제퍼슨 가속기연구소의 전자빔을 이용하는 핵자 구조 실험
- Electron-Ion Collider (EIC)

- AMoRE : 중성미자 미방출 이중 베타 붕괴 탐색 실험
- Korea Neutrino Observatory (KNO), Hyper-Kamiokande

2022.11.22

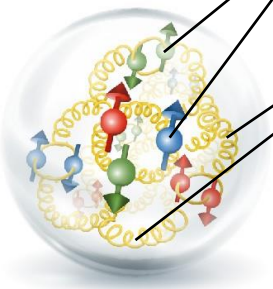
제퍼슨 가속기연구소(Jefferson Lab) : 핵자 구조 실험 (미국)

Structure of the nucleon (핵자 구조): How are the quarks and gluons distributed (in space, momentum, spin) and correlated inside the nucleon?



proton

More precise image of the nucleon

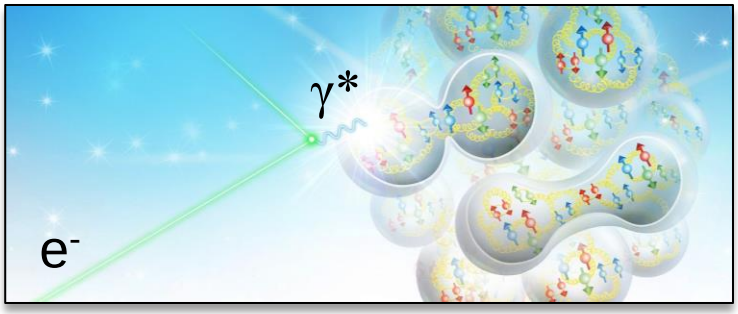


quarks

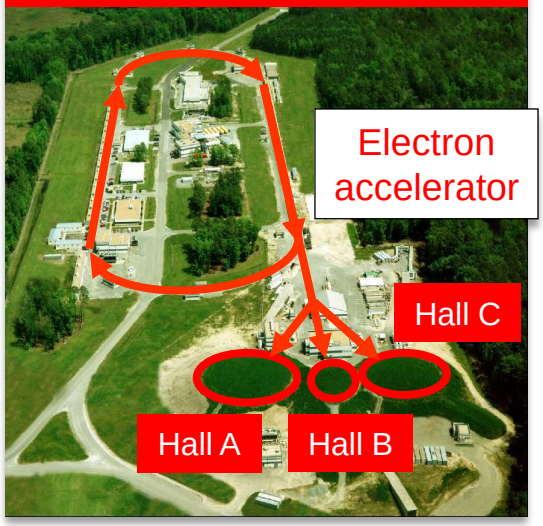
gluons

strong force

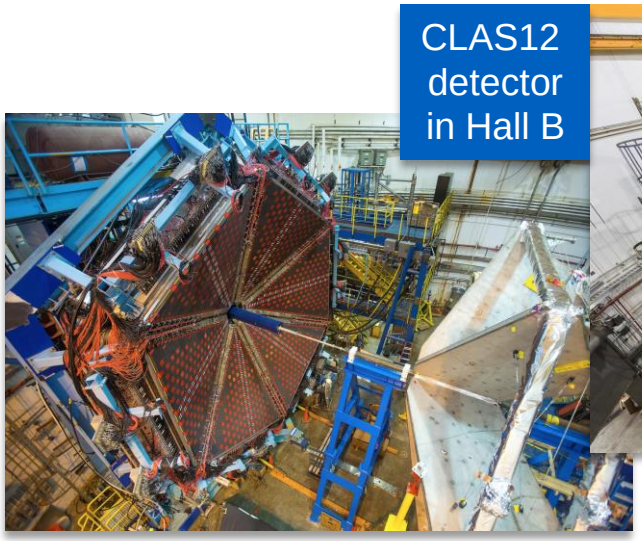
proton

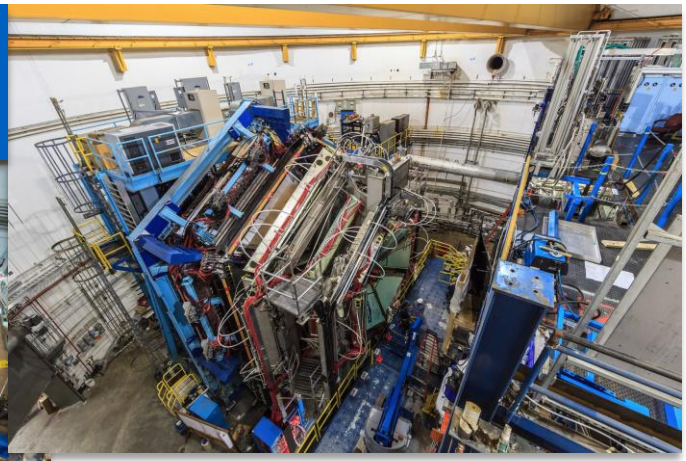


Jefferson Lab (Virginia, USA)



CLAS12 detector in Hall B

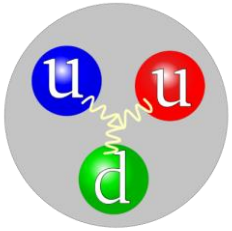




데이터 획득, 시뮬레이션, 데이터 분석, 검출기 개발 등의 연구

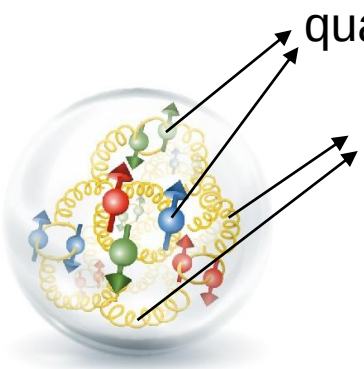
제퍼슨 가속기연구소(Jefferson Lab) : 핵자 구조 실험 (미국)

Structure of the nucleon (핵자 구조): How are the quarks and gluons distributed (in space, momentum, spin) and correlated inside the nucleon?

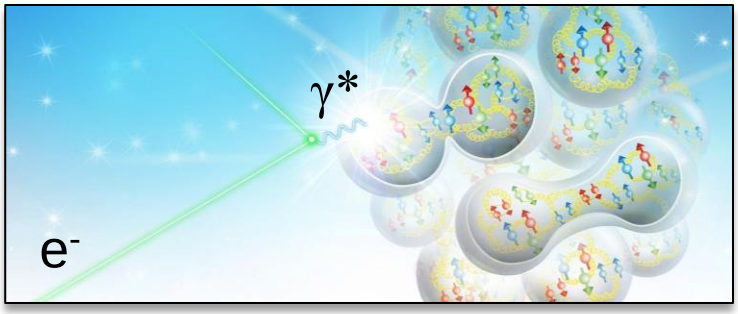


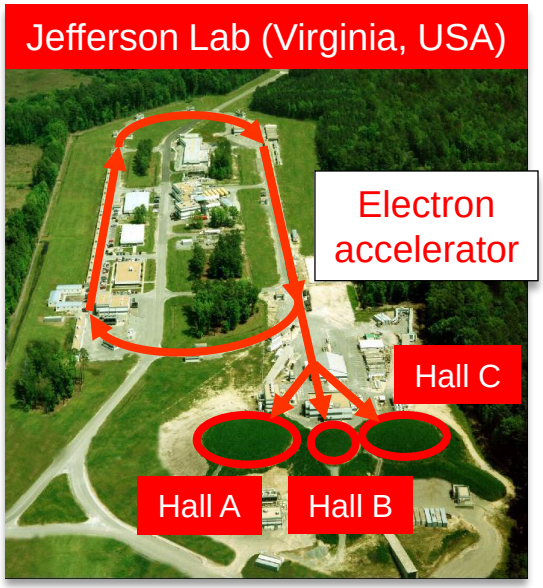
proton

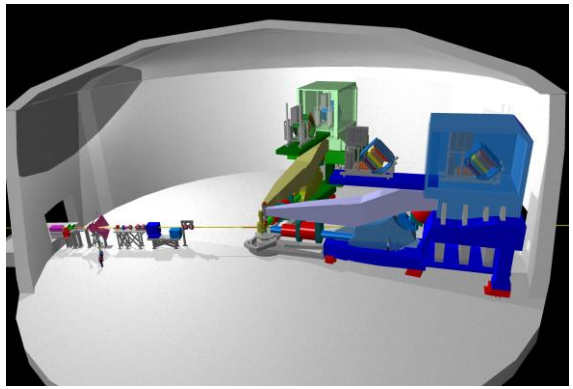
More precise image of the nucleon



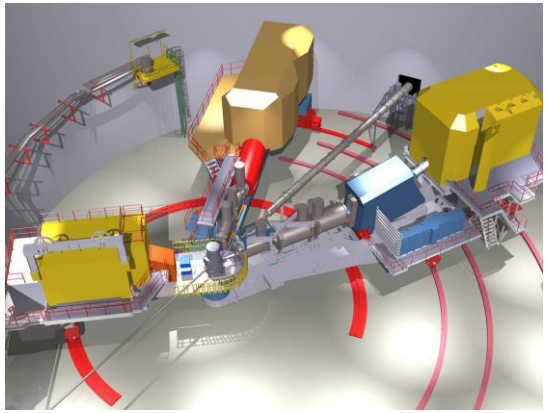
proton







Hall A

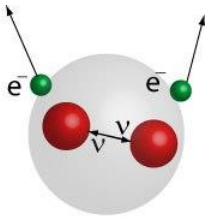


Hall C

데이터 획득, 시뮬레이션, 데이터 분석, 검출기 개발 등의 연구

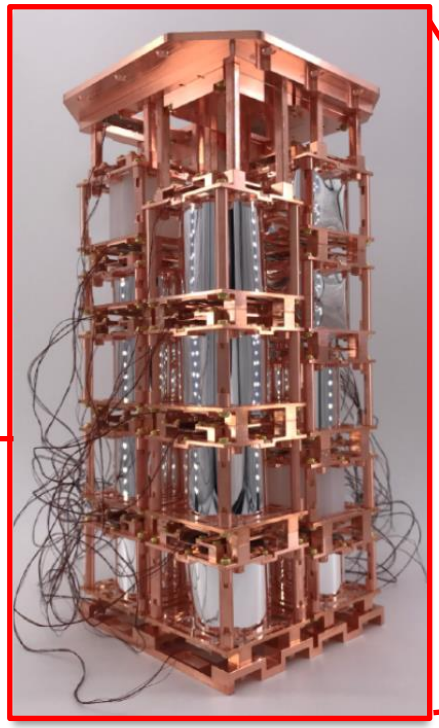
AMoRE : 중성미자 미방출 이중베타 붕괴 탐색 실험 (한국)

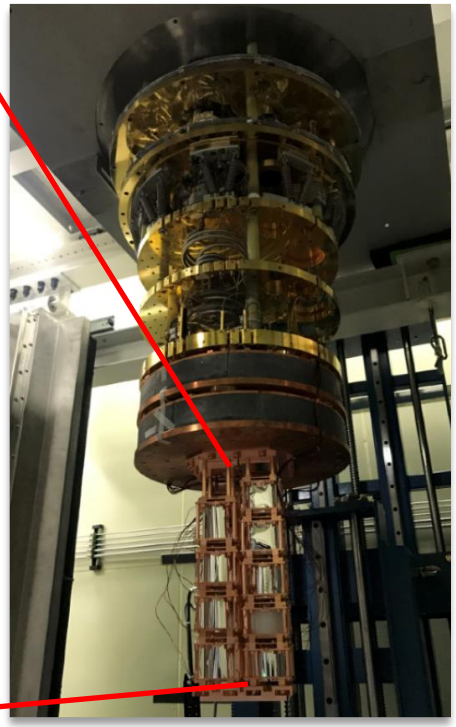
Nature and mass of the neutrino (중성미자): The observation of neutrinoless double beta decay would reveal the nature and mass of the neutrino



$0\nu\beta\beta$

Scintillation crystals (섬광결정) equipped with heat and light low-temperature detectors (저온 빛과 열 검출기)



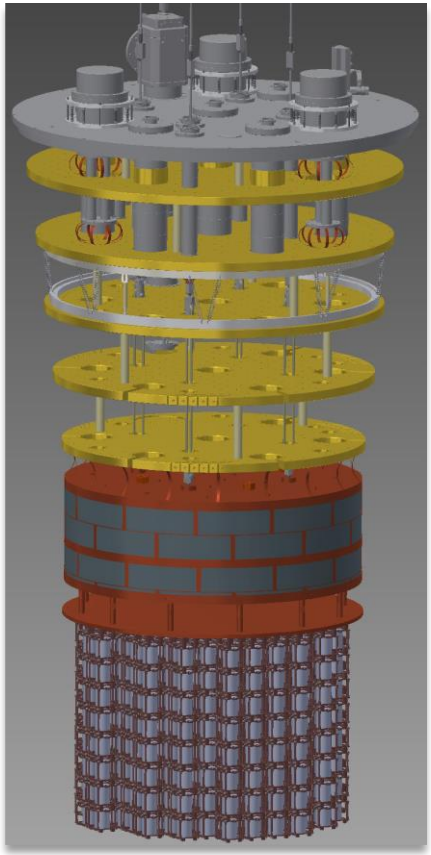


AMoRE-I at Y2L
(700 m-deep underground lab at Yangyang)
18 scintillation crystals

Low-temperature detectors (저온 검출기) operated at temperatures below **10 mK** by using a dilution refrigerator (희석냉동기)

AMoRE : 중성미자 미방출 이중베타 붕괴 탐색 실험 (한국)

Nature and mass of the neutrino (중성미자): The observation of neutrinoless double beta decay would reveal the nature and mass of the neutrino



AMoRE-II at Yemilab
(1000 m-deep underground lab at Jeongseon)
~ 500 scintillation crystals (섬광결정)

- 희석냉동기를 이용하여 섬광결정의 신호들을 측정하는 저온 검출기 개발 연구

- 진행 중인 AMoRE-I 실험과 준비 중인 AMoRE-II 실험 연구