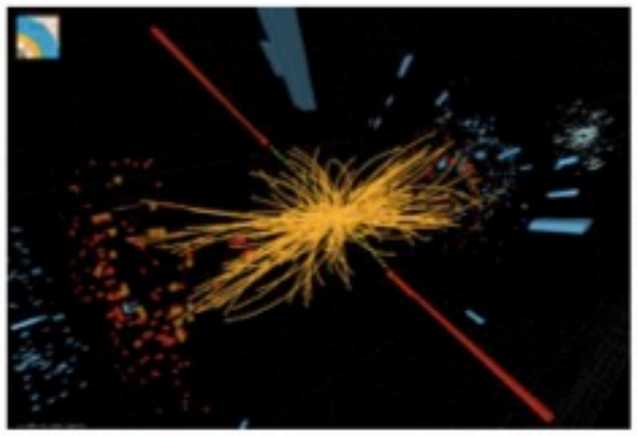
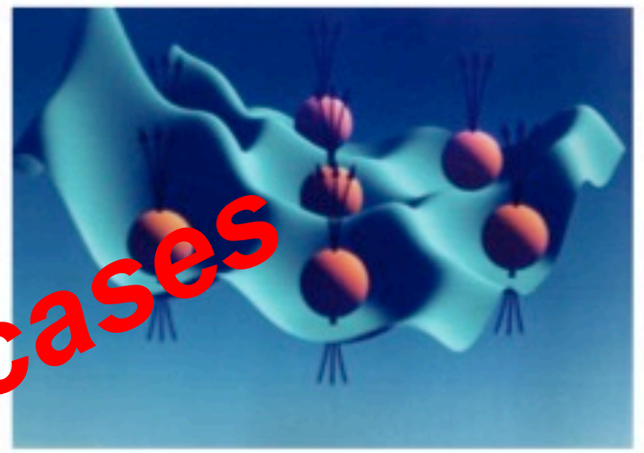
DREAM FOR FUTURE

Introduction

Hwidong Yoo (Yonsei Univ.)

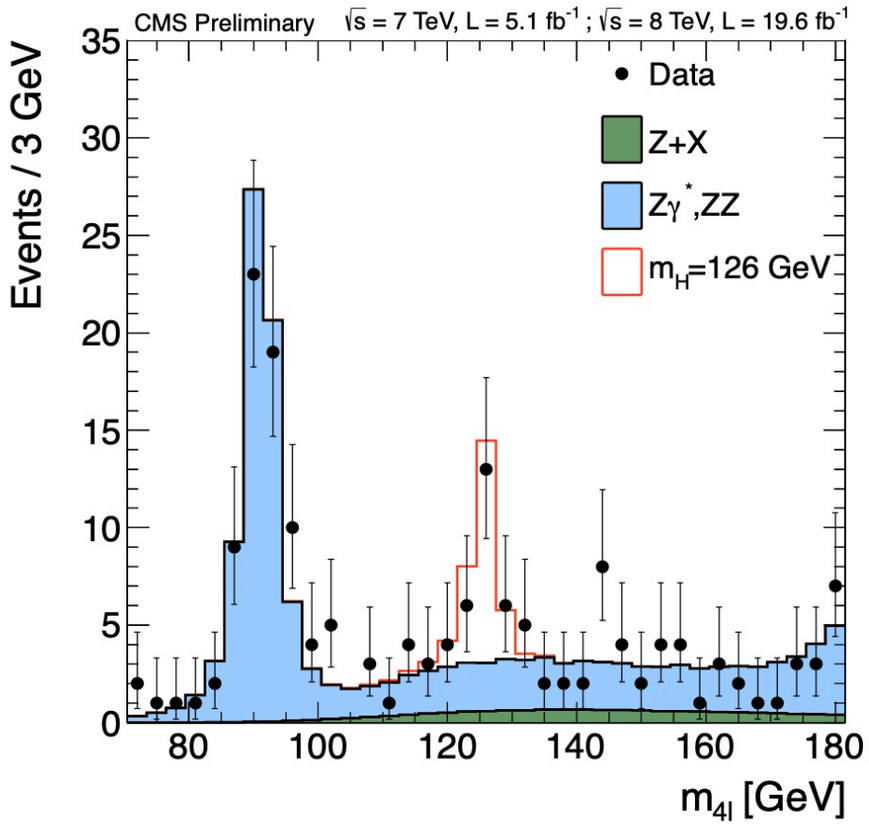
FCC workshop, Feb. 21, 2022

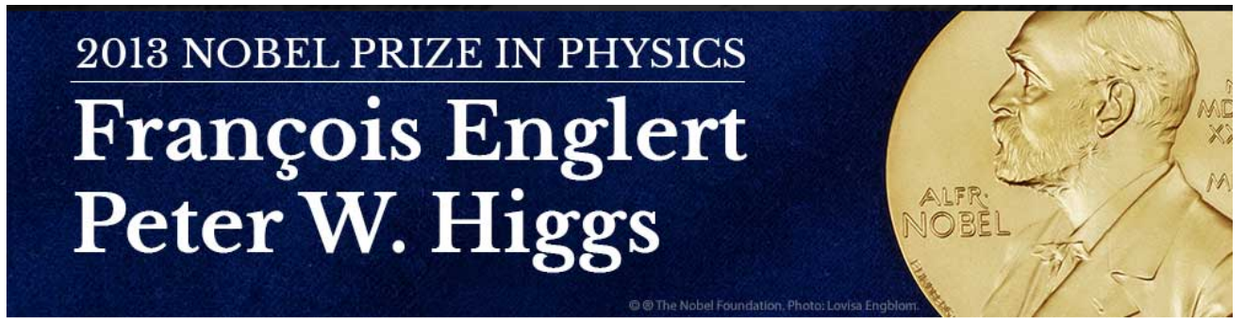
Frontiers of Physics

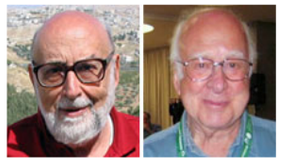
short distance	long distance	complexity
		
Higgs boson	Large scale structure	"More is different"
Neutrino masses	Cosmic microwave background	Many-body entanglement
Supersymmetry	Dark matter	Phases of quantum matter
Quantum gravity	Dark energy	Quantum computing
String theory	Gravitational waves	Quantum spacetime

Frontiers = Extreme cases

Higgs Discovery



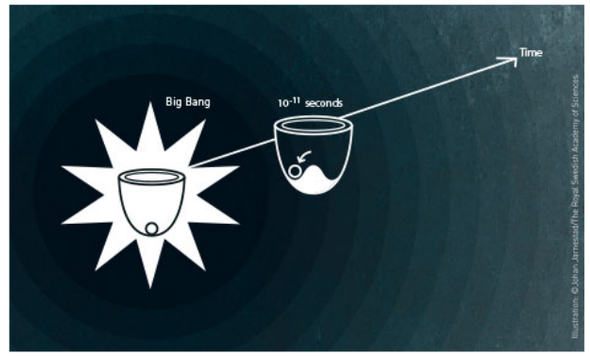




F. Englert and P. Higgs
Photo: Wikimedia Commons

2013 Nobel Prize in Physics

The Nobel Prize in Physics 2013 was awarded jointly to François Englert and Peter W. Higgs *"for the theoretical discovery of a mechanism that contributes to our*



What Happened after the Big Bang?

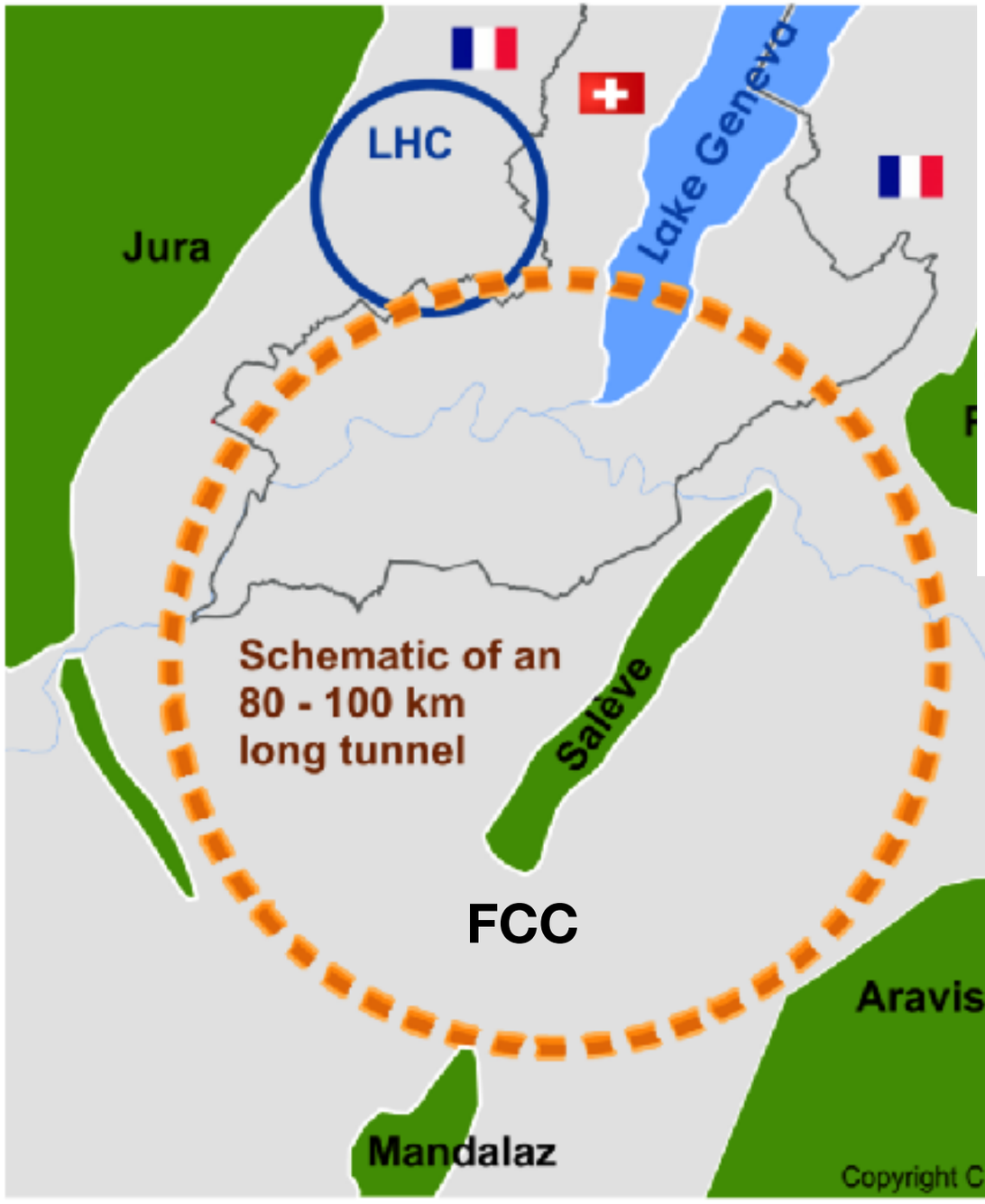
Announcements of the 2013 Nobel Prizes

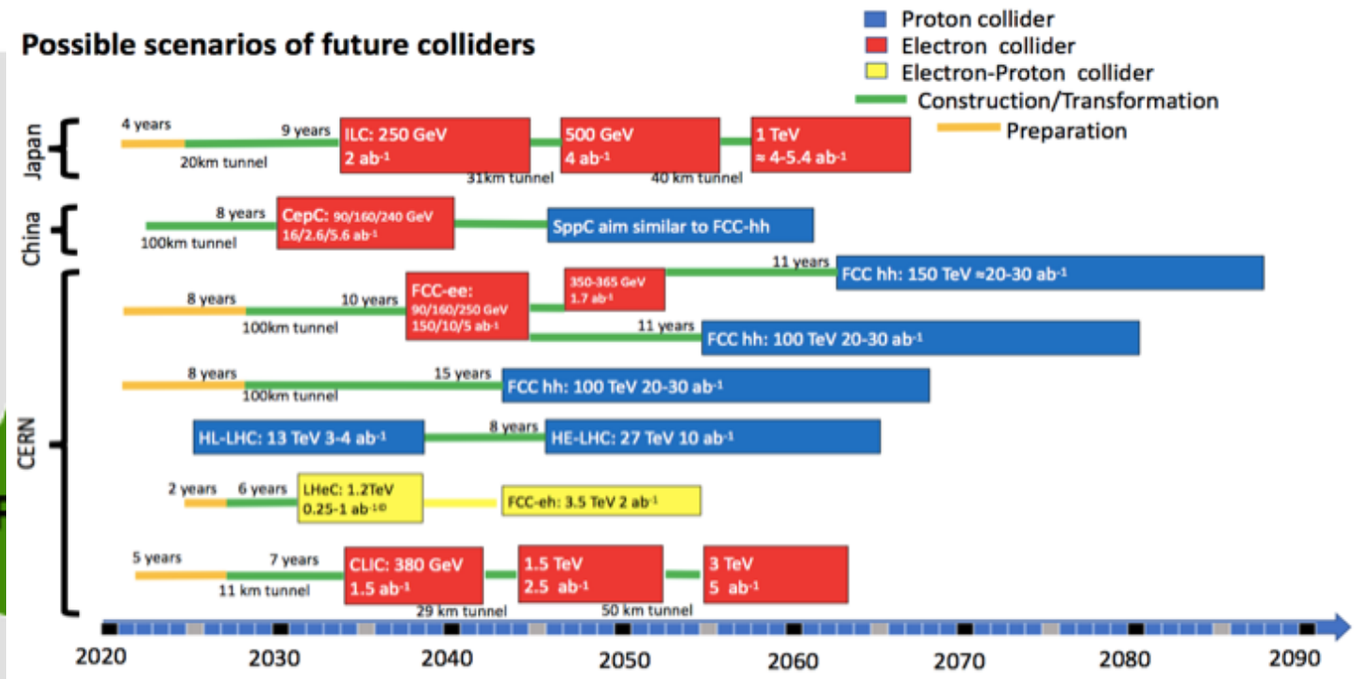
Physiology or Medicine:
Announced Monday 7 October
Physics:
Tuesday 8 October, 11:45 a.m. CET at the earliest
Chemistry:
Wednesday 9 October, 11:45 a.m. CET at the earliest
Literature:
Thursday 10 October 1.00 p.m. CET
Peace:

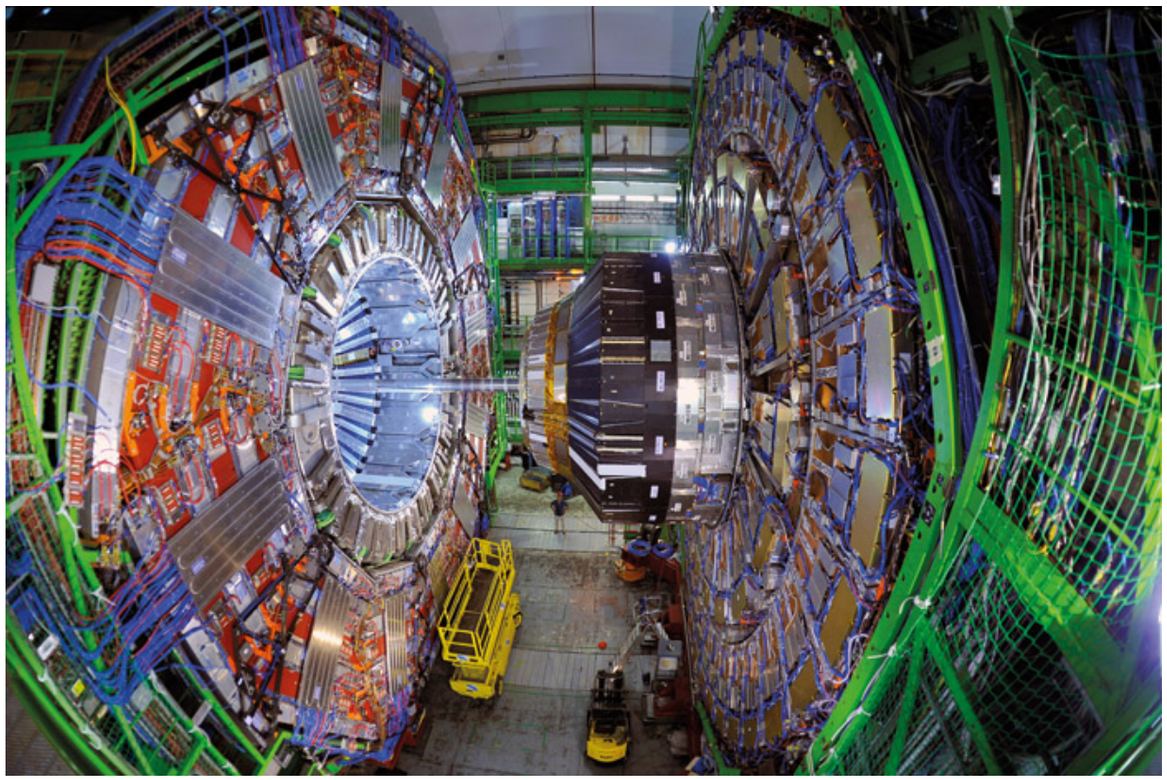
Higgs Discovery

Future Circular Collider

건설 비용 약 10 조 소요 예상

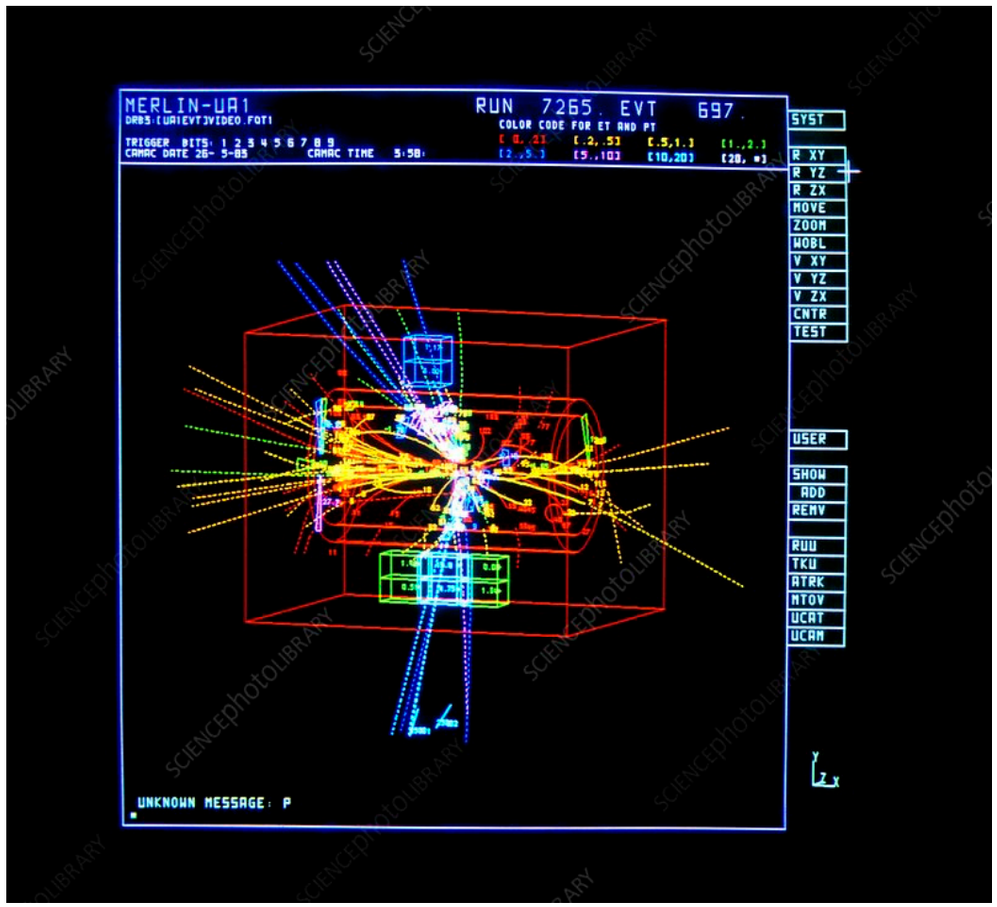


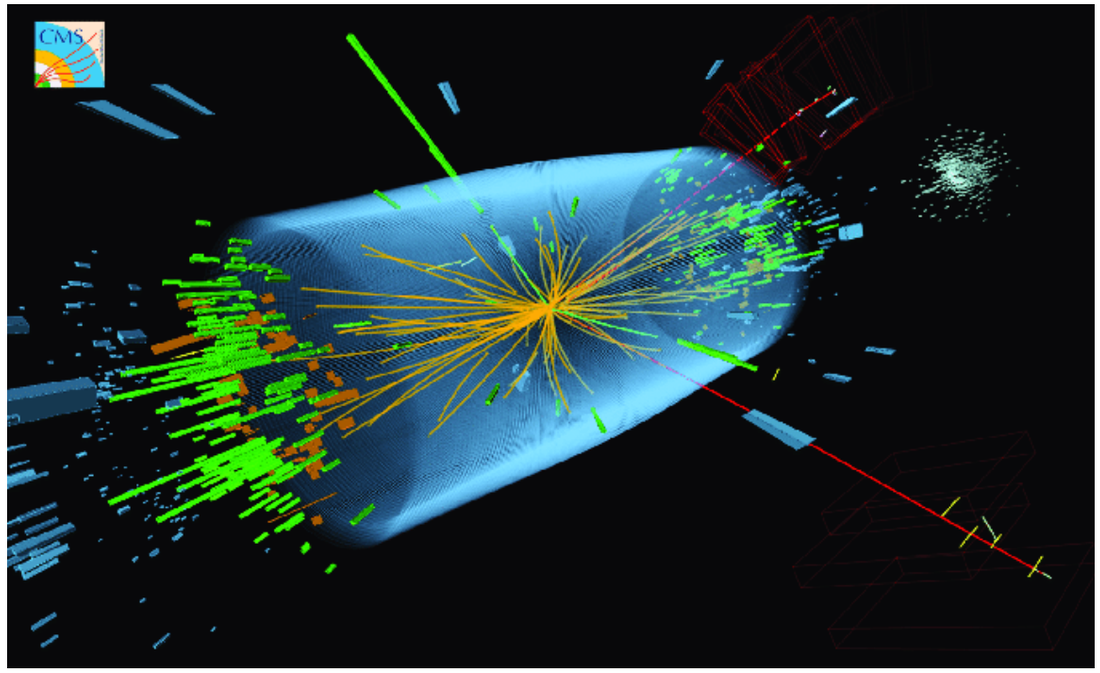




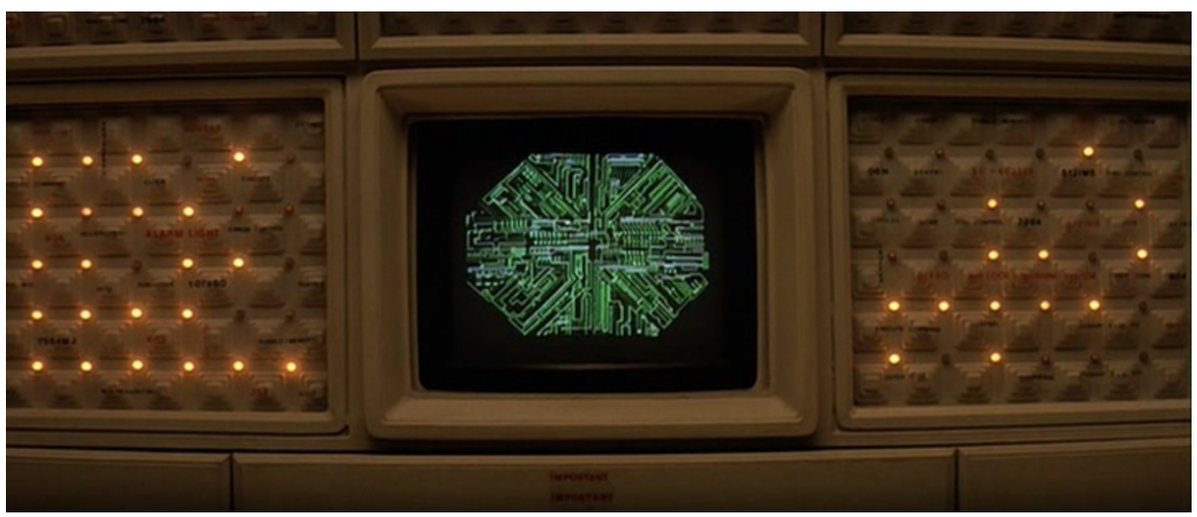
2040년 시작 예상

UA1 vs. CMS





Do we want to repeat almost same thing?



Alien, 1979

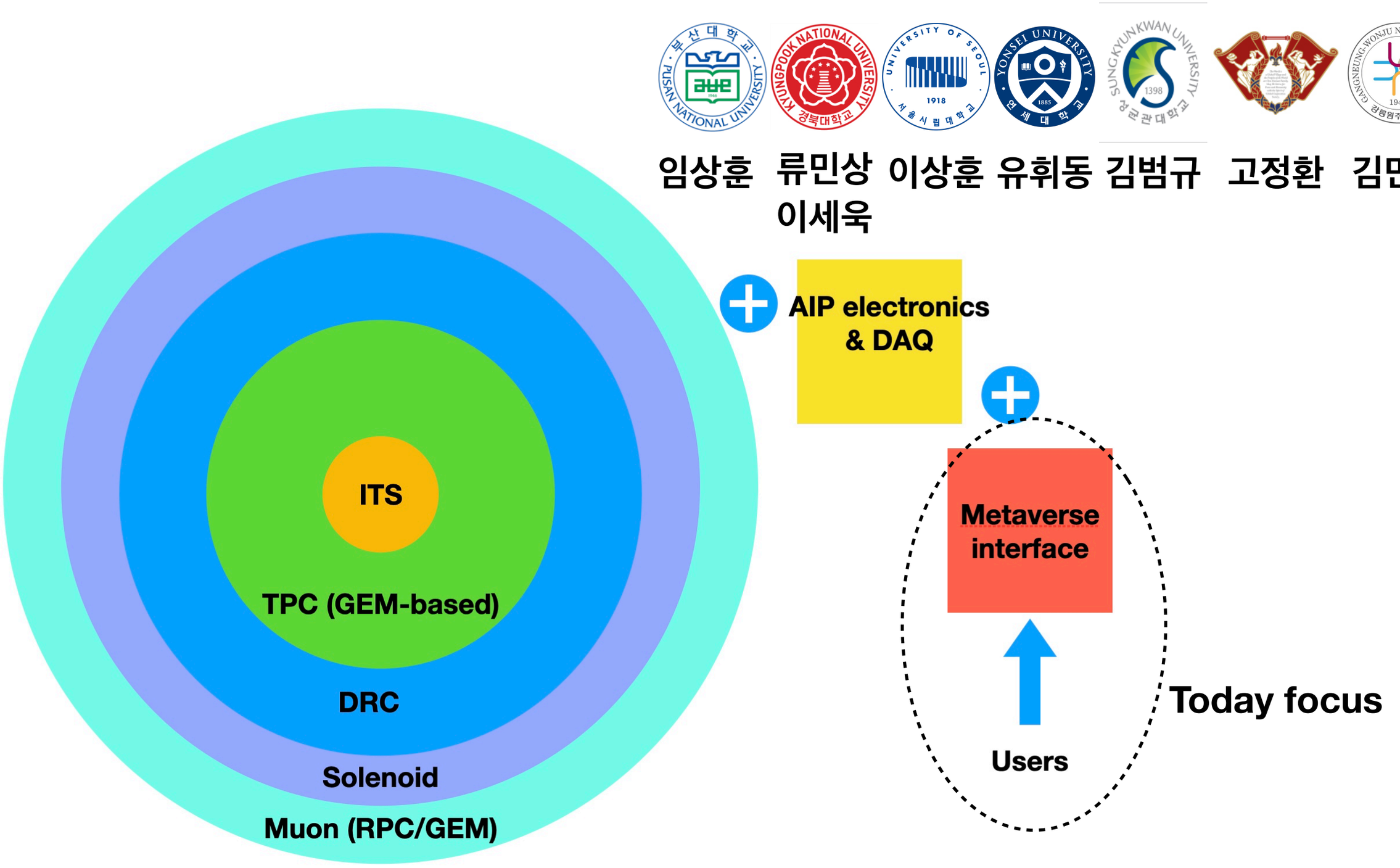
Prometheus, 2012

Do We Still Have HEP Fans?

- How to make a dream for next generation?

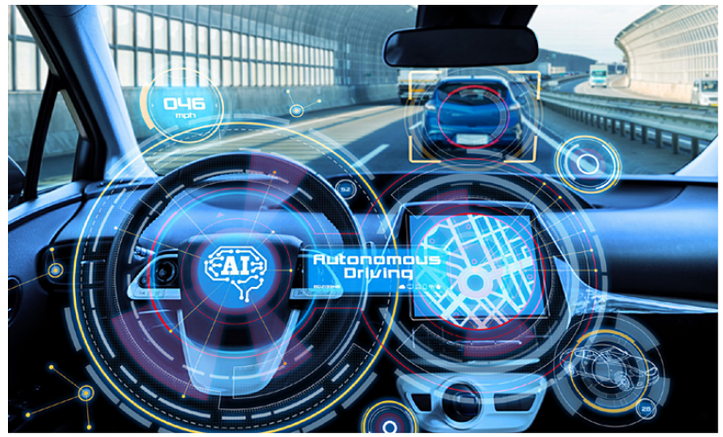
인공지능 물리학자 (AI Physicist)

- Under discussion for AIP detector concept



Functionality of AIP Detector

- Candidates we are thinking now …
- Autonomous driving



- Mother system

- Metaverse environment

Today Agenda

- Enjoy!

Future Collider workshop: toward AI Physicist detector

Monday 21 Feb 2022, 14:00 → 18:45 Asia/Seoul

Zoom

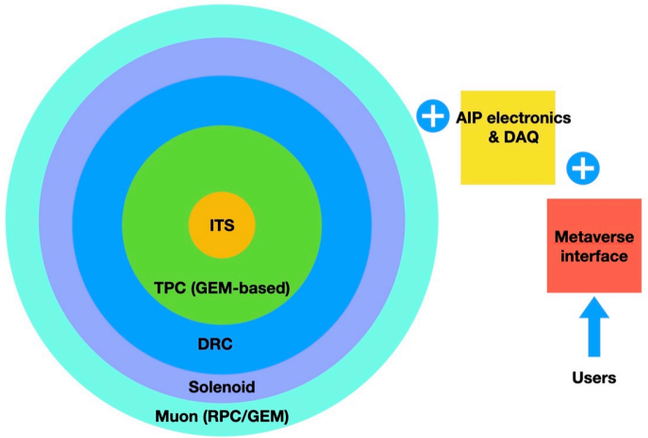
Hwi Dong Yoo (Yonsei University (KR))

Description 워크샵 조직위원: 고정환 (경희대), 김민석 (강릉원주대), 김범규 (성균관대), 유휘동 (연세대), 이상훈 (서울시립대), 이세욱 (경북대), 임상훈 (부산대)

- This workshop aims to develop the new design concept of the full ML-based detector for future e+e- colliders. The design has been initiated by the consortium of Korea HEP physicists (attached figure). For the autonomous HEP detector, we should design new user interface and framework. Metaverse, gaming and cloud interfaces will give an inspiration for the new detector concept. Therefore we discuss present and future on the fields in this workshop.

- official activity of Korea Future Collider Consortium

- consortium homepage: https://sites.google.com/yonsei.ac.kr/korea-fc-consortium



Videoconference Future Collider Monthly Meeting — Join

Registration *You are registered for this event.* — 27 — Check details

Participants Dongwoon Kim, Guk Cho, Haesung Park, Hangil Jang, Hwi Dong Yoo, Jaehyeok Ryu, Jang Seoyun, JUNWON OH, Kyuyeong Hwang, MINJAE KIM, Minjae Kwon, Minseok Oh

14:00 → 14:10	**Introduction**	10m
14:10 → 14:55	**Metaverse application** **Speaker**: Dr Byounghyun Yoo (KIST)	45m
14:55 → 15:40	**Big data analysis of Gaming** **Speaker**: Dr Youngkyu Choi (PUBG Studios)	45m
15:40 → 16:25	**Google cloud** **Speaker**: Dr Jincheol Kim (Google)	45m
16:25 → 17:00	**Panel discussion**	35m