# Introduction

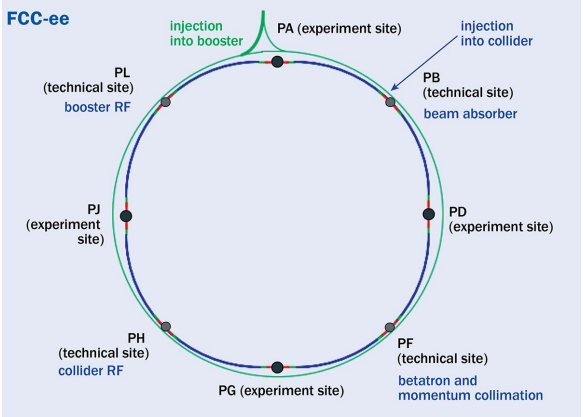
Mary-Cruz Fouz (CIEMAT), Adrián Irles (IFIC, CSIC-UV),
Ximo Poveda (IFIC, CSIC-UV)

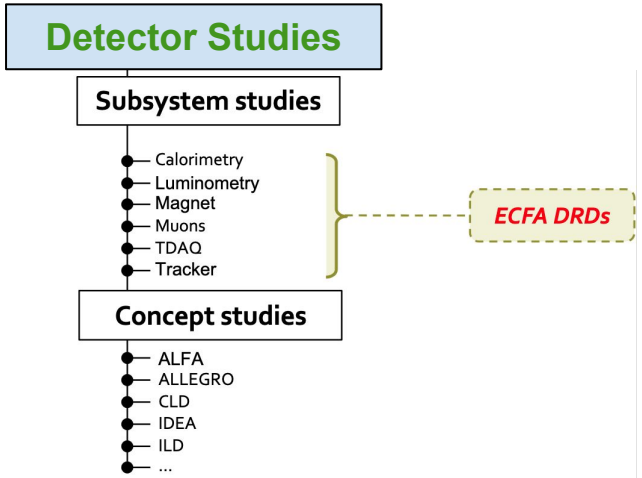
21 October 2026

Jornadas de la Red Española de Futuros Colisionadores

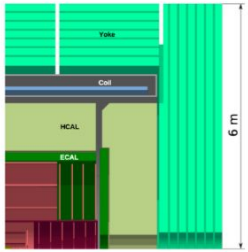
# FCC and its detectors

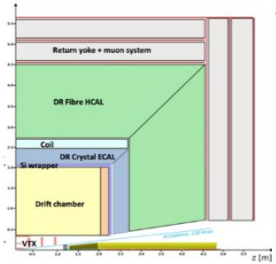
- FCC-ee project is aiming for 4 experiments
- FCC Detector Studies Work Package, within the FCC Physics, Experiments, and Detectors (PED):
  - Detector Subsystem groups:
    - Generic system-level studies: Calorimeters, Luminometers, trackers+PID, Muons, Magnets, TDAQ
    - In collaboration with the ECFA DRD collaborations
  - Detector Concept Study groups:
    - Studying and optimising a specific detector subsystem association and integration into a full experiment
    - One for each of the six (so far) proposed detector concepts



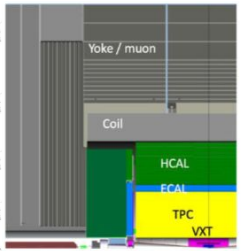
# Proposed FCC-ee detector concepts in a nutshell

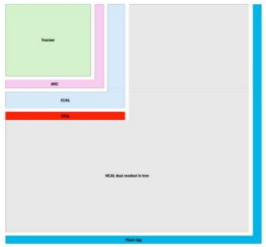


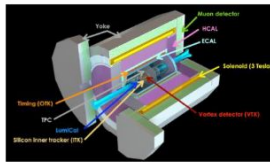









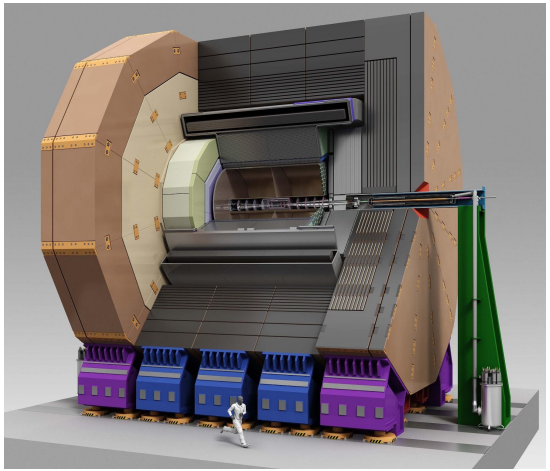





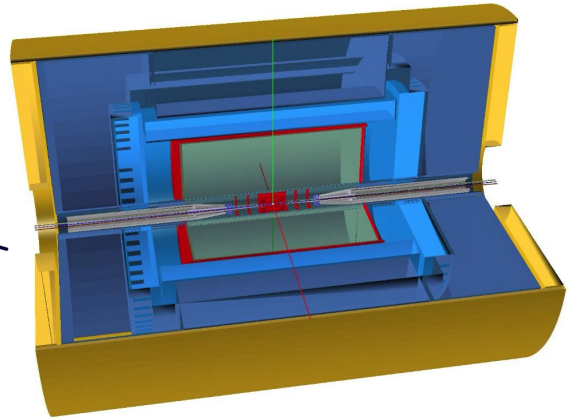

| | CLD | IDEA | ALLEGRO | ILD | ALFA<br>emerging | AGORA<br>from CEPC, new for FCC-ee |
|---|---|---|---|---|---|---|
| **Vertex** | Si | MAPS (ITS-3 like) | MAPS (ITS-3 like) | Si | MAPS (ITS-3 like) | MAPS |
| **Tracker** | Full Si | Drift Chamber + Si strp | DCH / Straw / SciFi + Si | TPC + Si strips | All MAPS | TPC + Si strips |
| **ECAL** | Si-W highly granular | Crystals w. DR | Noble Liquid (LAr) | Si-W highly granular | Grainita (crystal grains) | Crystals |
| **HCAL** | Scint. sampling | Fibre DR | TileCal (steel/scint.) | Scint. or RPC | DR + steel | Glass scint. + steel |
| **Muon** | RPC in iron yoke | µRWELL | TBD | Scint. in iron yoke | TBD | Scint. in yoke |
| **PID** | RICH (option) | tracker dN/dx (+ TOF) | tracker dN/dx (+ TOF) | tracker dN/dx (+ TOF) | Cherenkov ARC | tracker dN/dx (+ TOF) |
| **Coil<br>B-field** | Outside HCAL<br>2T | Inside HCAL<br>2T (3T HTS R&D) | Inside HCAL<br>2T | Outside HCAL<br>3.5 T -> 2-3 T | Inside HCAL<br>3T | Outside HCAL<br>3T |

Table taken from these slides by Mogens Dam

# Spanish participation



- **ILD:**
  - Spanish involvement: CIEMAT, IFCA, IFIC, IMB-CNM, ITA, UB
  - Mary-Cruz Fouz (CIEMAT): Spokesperson of the ILD Concept group
  - Adrián Irles (IFIC): ILD Institute assembly chair (previously co-convener of the ILD Software Group).



- **ALLEGRO:**
  - Inheriting many of the concepts of ATLAS: noble liquid ECAL + Tile HCAL
  - Spanish involvement: IFIC

# Agenda of the session

**10:30** → 13:00 **Detector concepts**

| | | |
|---|---|---|
| 10:30 | **Introduction**<br>**Speakers**: Adrian Irles (IFIC, CSIC-UV), MaryCruz Fouz (CIEMAT), Ximo Poveda (IFIC, CSIC-UV) | 10m |
| 10:40 | **FCC software overview and opportunities to contribute (by zoom)**<br>**Speaker**: Brieuc François (CERN)<br>**Invited speaker**<br>**FCC Physics Software & Computing coordinator** | 30m |
| 11:10 | coffee | 20m |
| 11:30 | **Towards ILD geometry and reconstruction adaptation for FCC-ee Tera-Z**<br>**Speaker**: Adrian Irles (IFIC, CSIC-UV)<br>**Call for abstracts** | 20m |
| 12:00 | **$Z \to \tau^+\tau^-$ reconstruction and preliminary tau polarization studies at FCC-ee: ILD vs CLD**<br>**Speaker**: Olmo Arquero Peinazo (CIEMAT) | 20m |
| 12:30 | **Machine Learned Particle Flow developments for ALLEGRO**<br>**Speaker**: Ana Arranz Asensi | 20m |