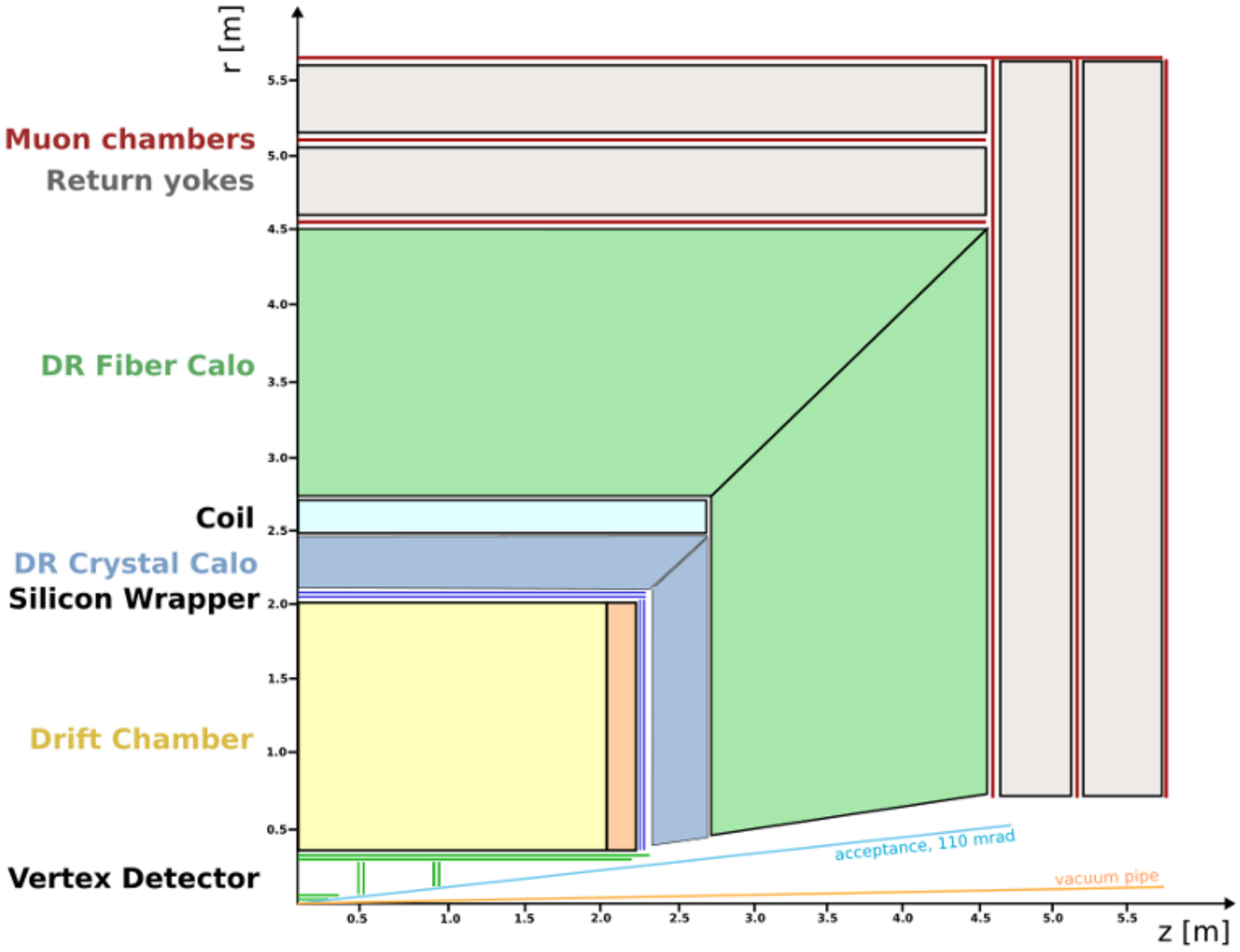
# IDEA Study Group News

Paolo Giacomelli
INFN Bologna

2nd IDEA Study Group meeting
November, 19 2024

# IDEA detector new baseline layout



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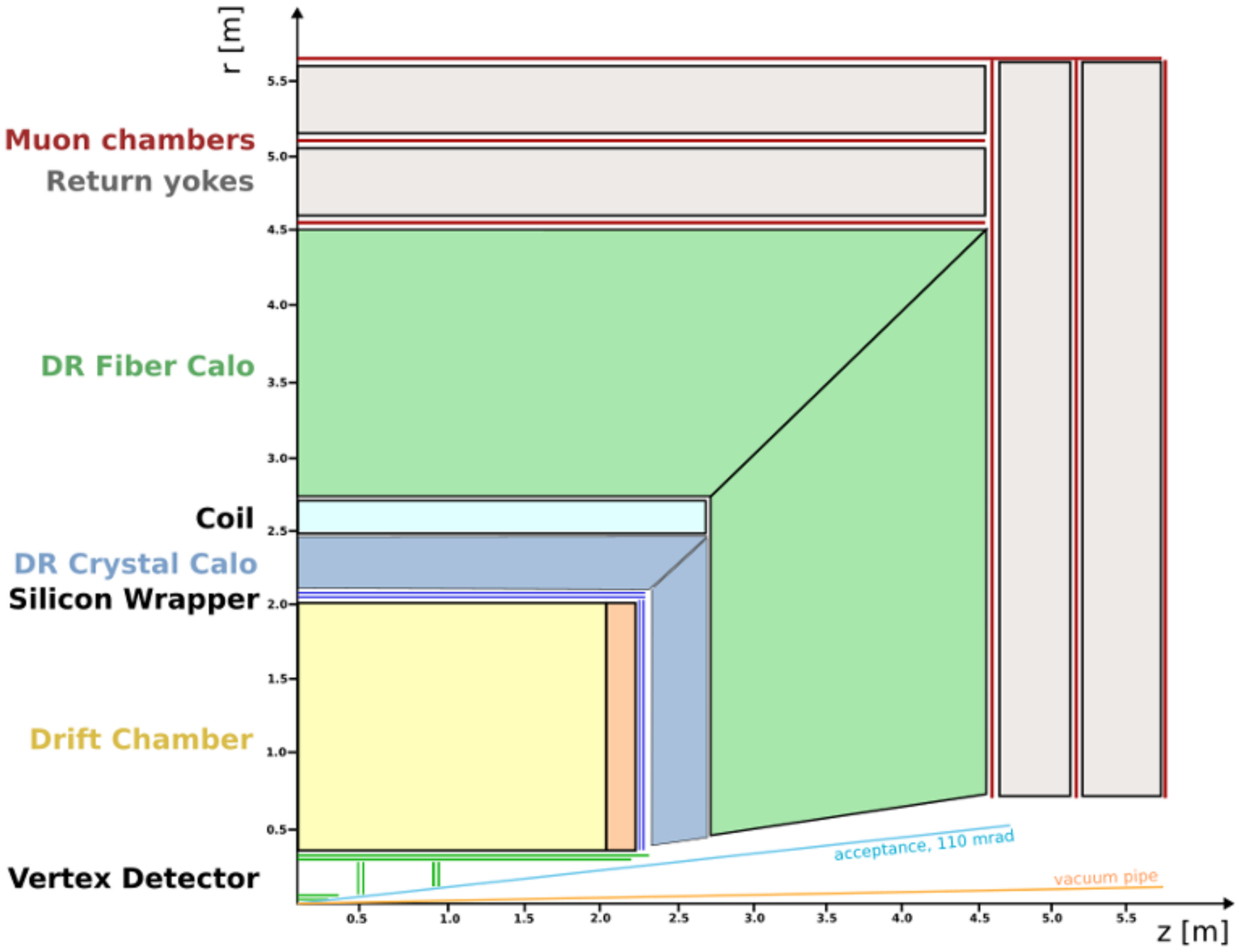
**Beam pipe**: R~1.0 cm



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**Beam pipe**: R∼1.0 cm

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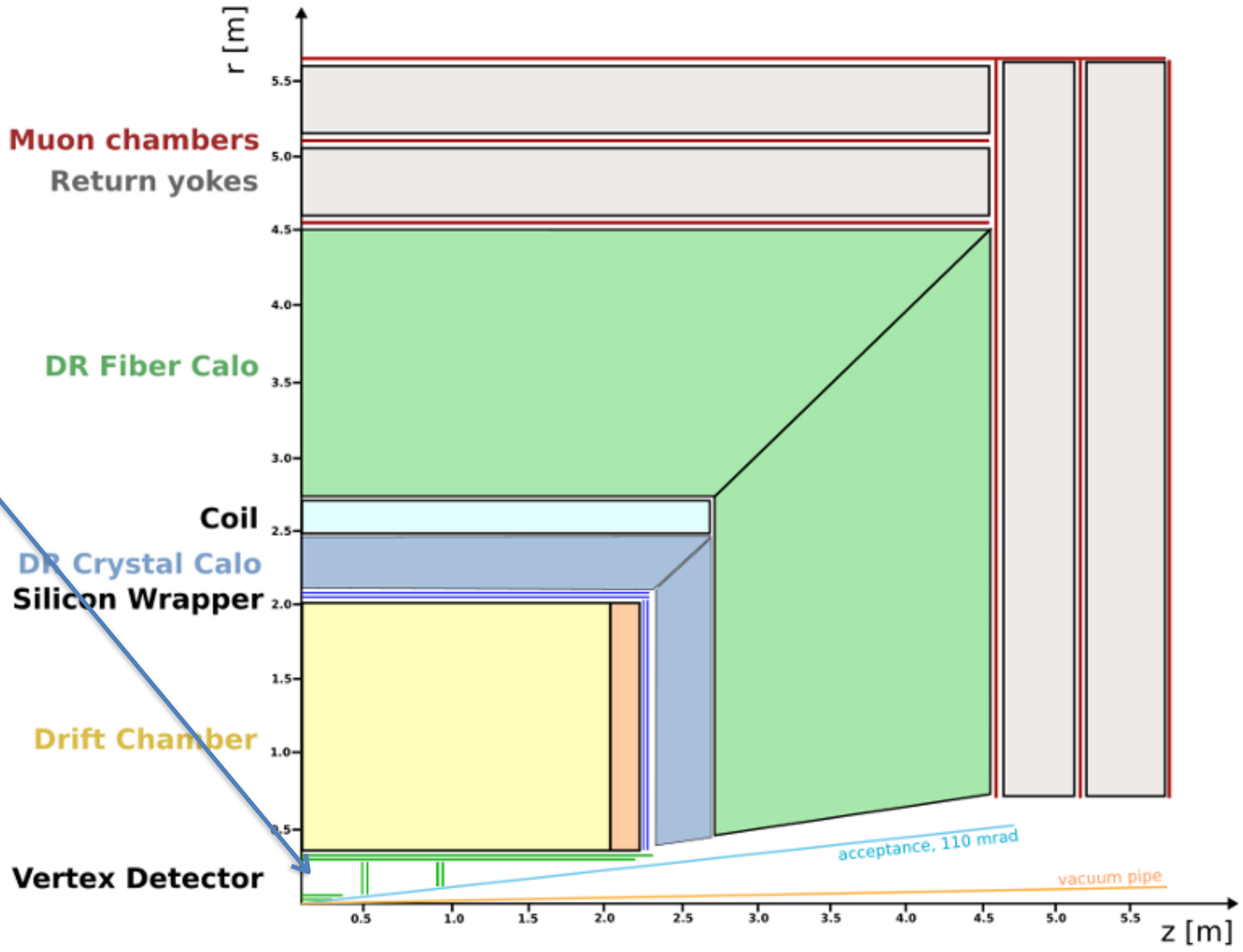
5 MAPS layers

R = 1.37-31.5 cm



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**Beam pipe**: R∼1.0 cm

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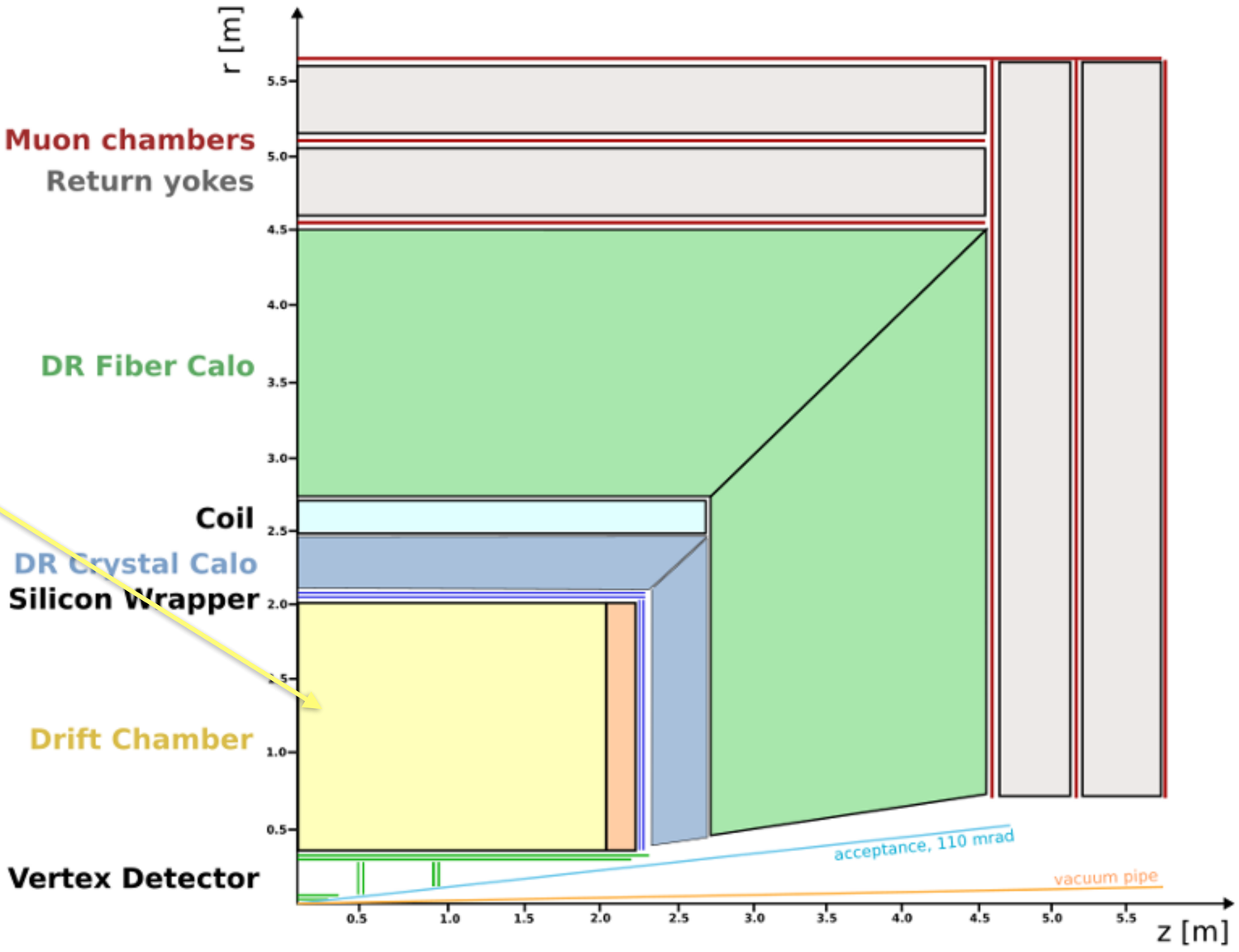
**Drift Chamber**: 112 layers

4 m long, R = 35-200 cm



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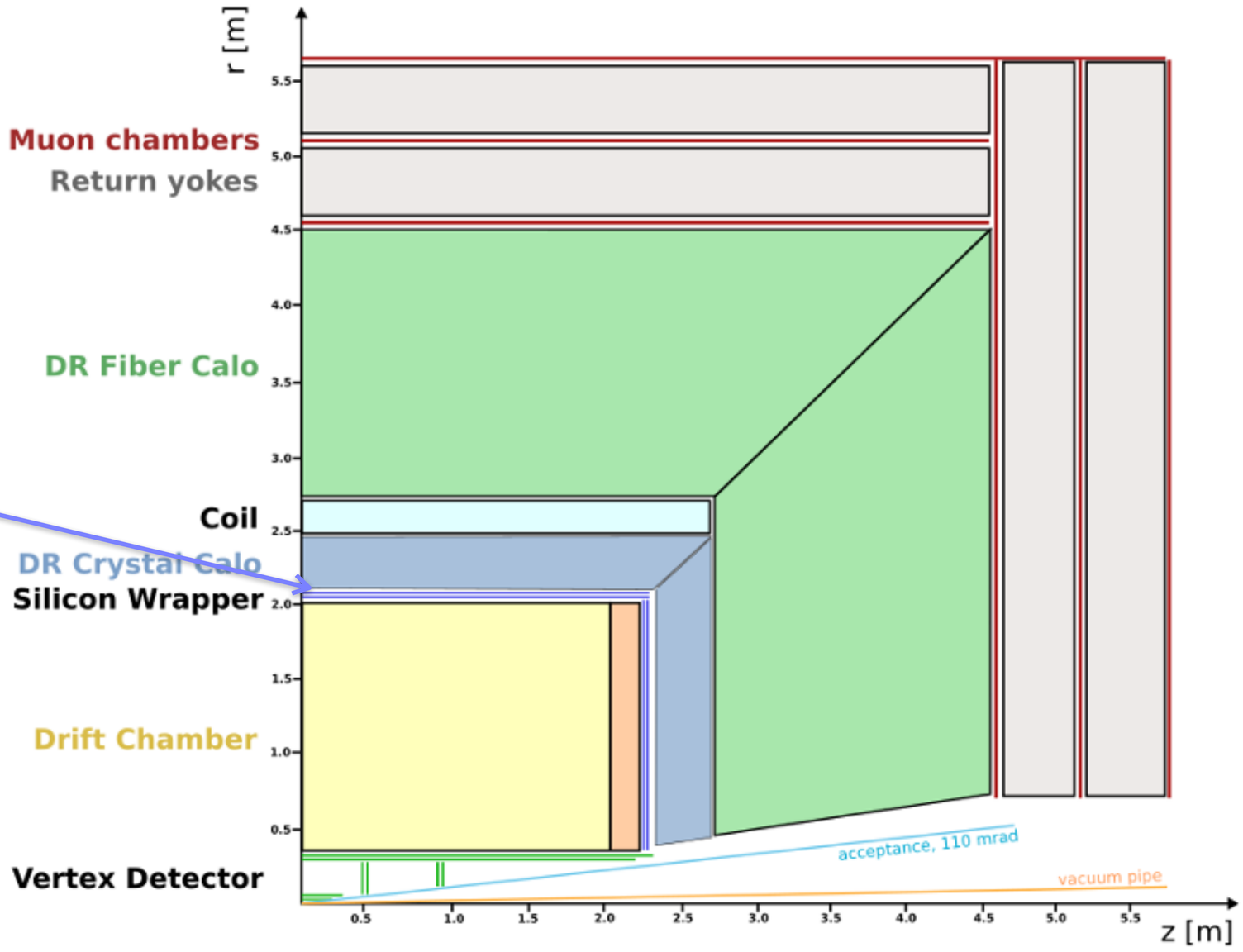

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**DR crystal ecal**: ~ 22 $X_0$

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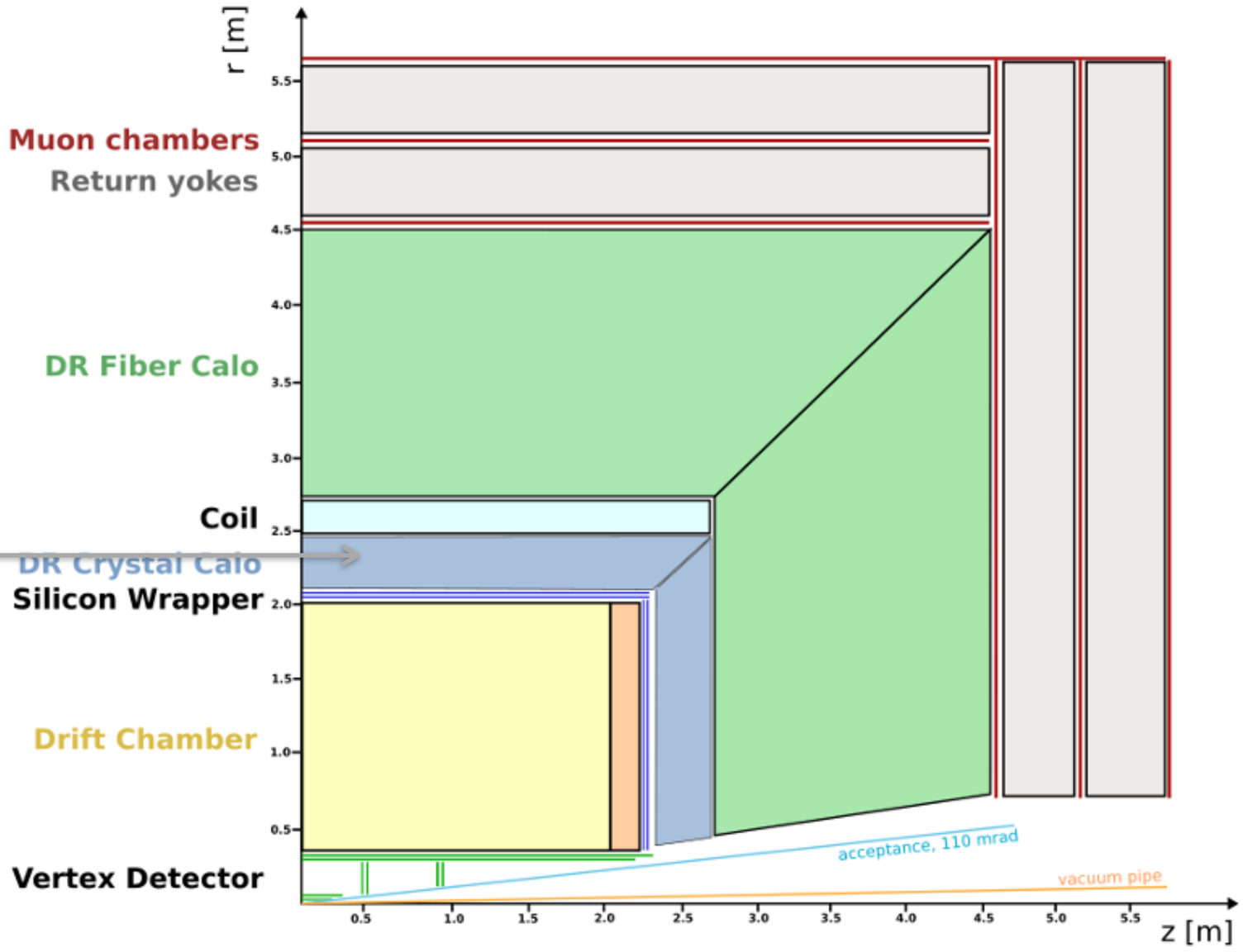

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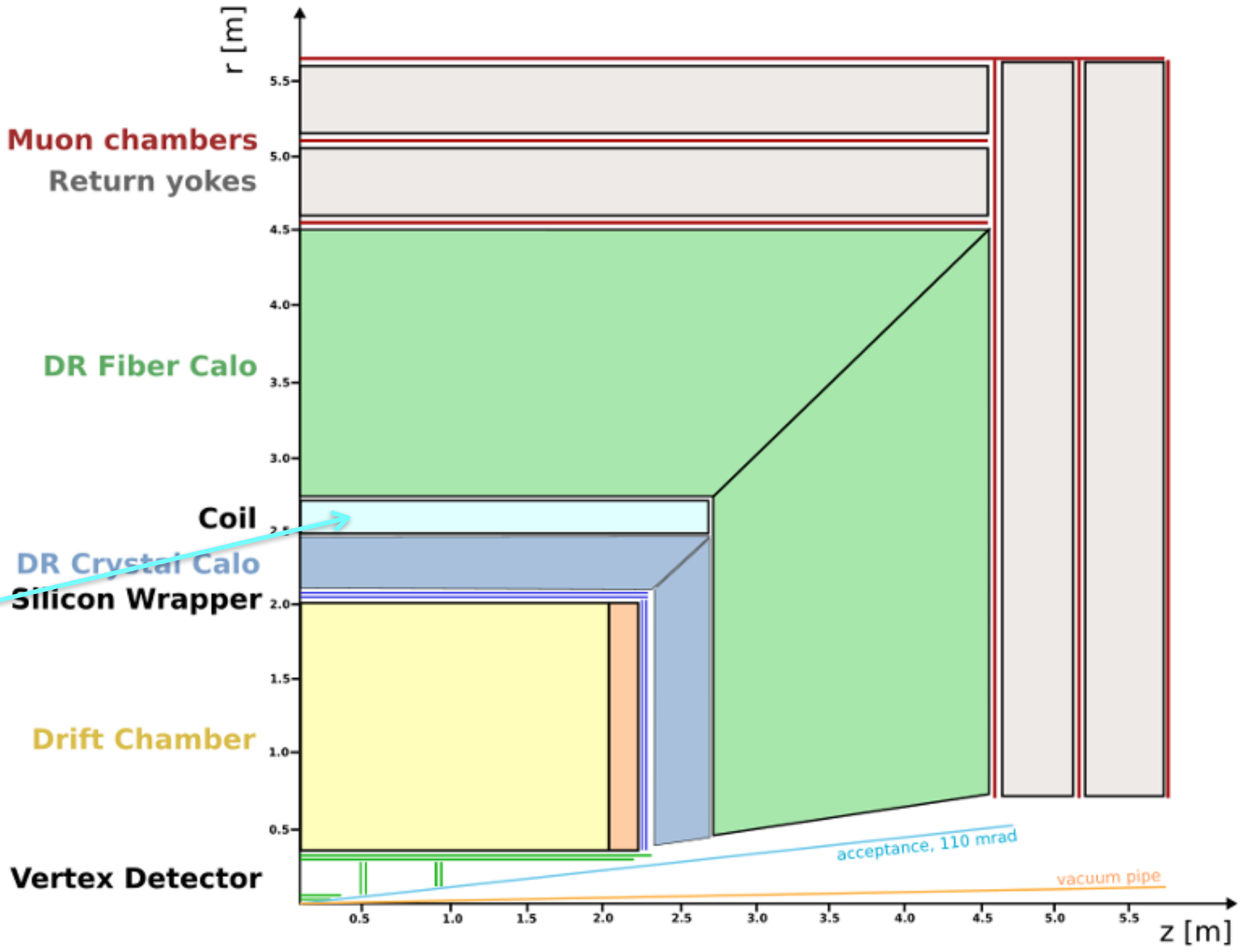
**Superconducting solenoid coil:**

3 T, R ~ 2.5-2.8 m



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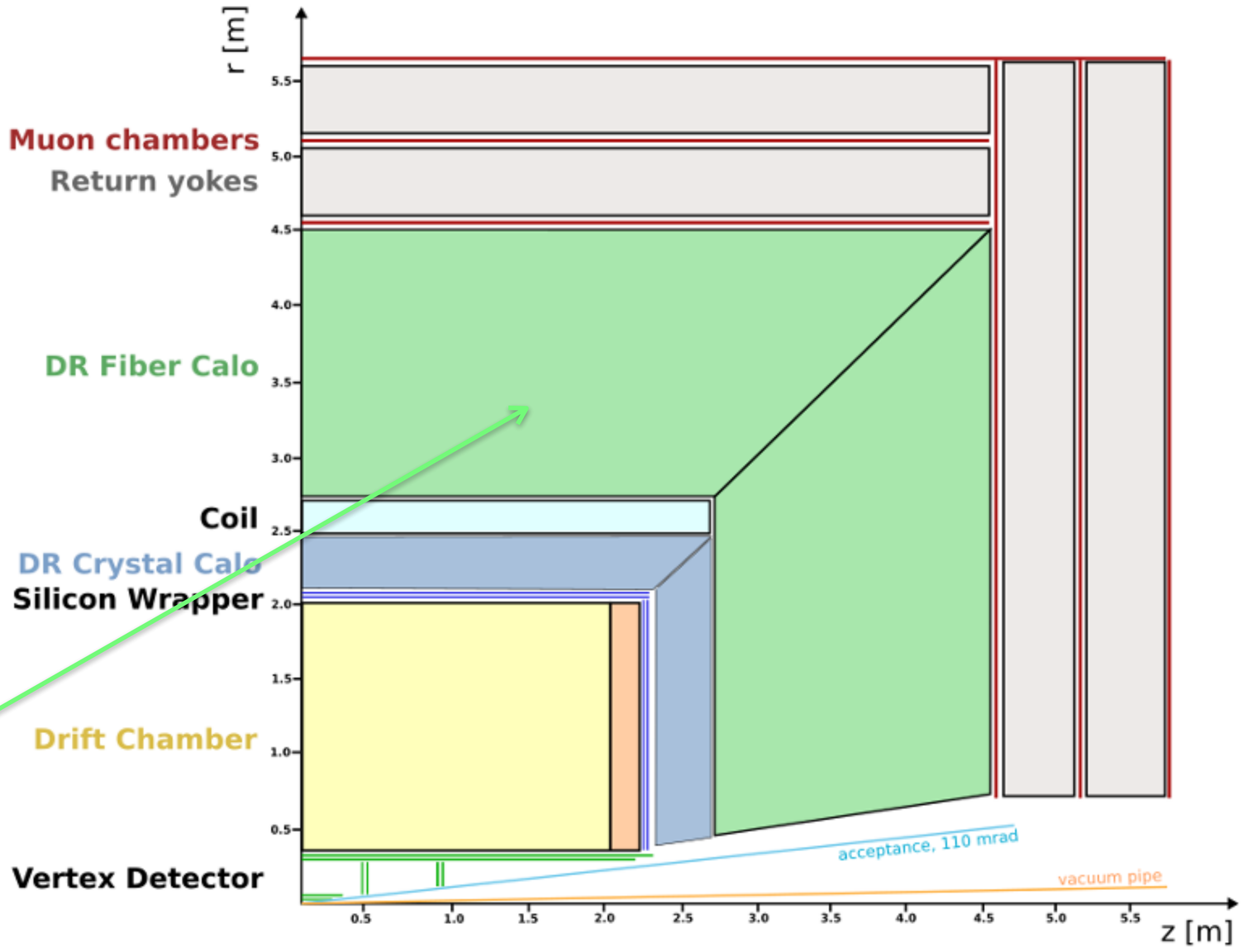
**Dual-Readout Calorimeter**:

R = 280-460 cm



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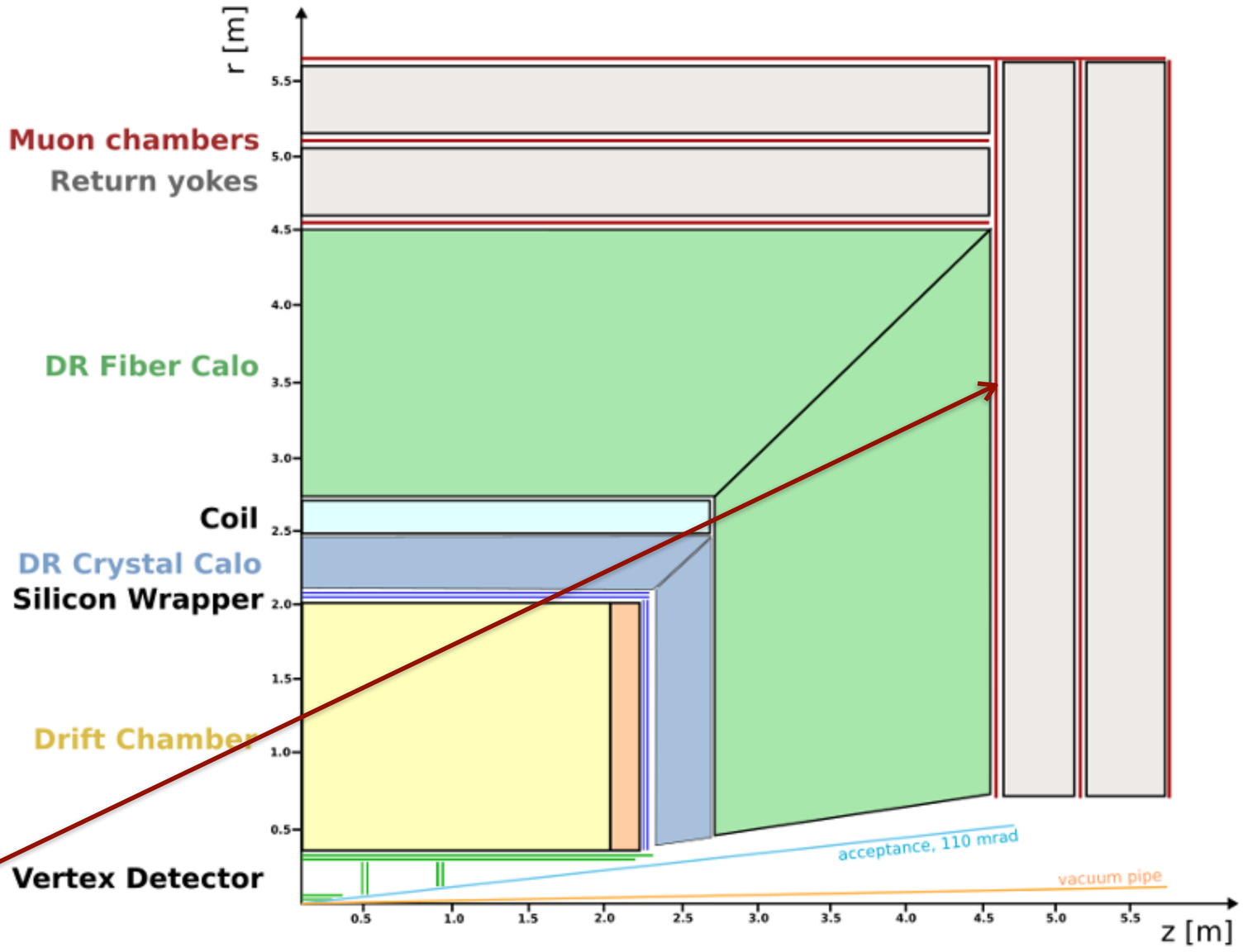
**Yoke + Muon chambers**

R = 460-570 cm



# New design of IDEA's solenoid

- Had a very positive meeting in June with L. Rossi and his LASA collaborators
  - LASA people will propose a new solution for IDEA's solenoid
    - They will take into account the inclusion of the crystal calo
      - Inner radius considered 2.5 m
      - Relax constraints on solenoid's material in terms of $X_0$
    - The solenoid  will be designed to reach 3 Tesla and operate at 2 Tesla at the Z peak
    - Will discuss this proposal with L. Rossi and M. Mentink at CERN on November 28th

# FCC's Expressions of Interest

- Most of you have probably seen F. Sefkow's recent e-mail on the FCC EoIs
  - Detector technologies (sub-detectors)
  - Detector concepts
  - These will be used as inputs for the European Strategy Update
- Have to be presented by the end of January 2025
- We aim at writing an EoI for each of IDEA's sub-detector and also on the detector concept
  - These EoIs should be signed by all the collaborators

# EoIs for FCC-ee

- **For IDEA we have thought of presenting these EoIs for the detector technologies:**
  - **Vertex tracker**
  - **Drift Chamber**
  - **Outer tracker**
  - **DR crystal em calorimeter**
  - **HTS solenoid**
  - **DR fibre calorimeter**
  - **Muon detector**
- **And a detector concept EoI on IDEA**
- **Everyone is invited to participate to and sign these EoIs**

For the time being we have been asked by PED coordination for a "registration" of the sub-detectors EoI, the submission will follow later. Detector concepts EoIs and sub-detectors EoIs should cross-reference each other.
Deadline for submitting EoIs end of January 2025

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  - Next meeting on **Tuesday December 17th, 2024** at **16:00 (GVA time)**