

**NUPP 2026**

**Colliders and detectors  
Exercise**

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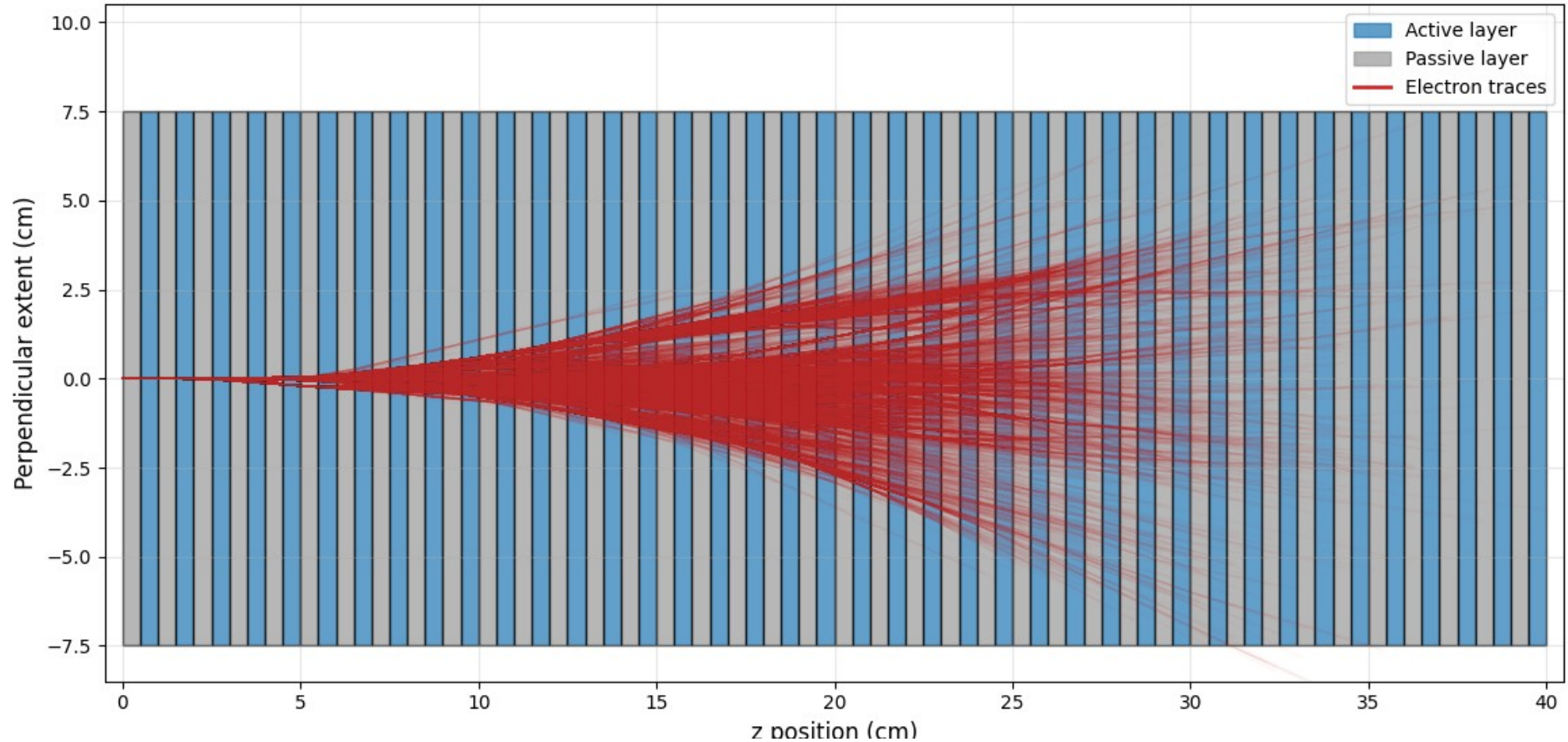


# Design a calorimeter

- Use the supplied calorimeter to design the best possible calorimeter
- You have the following constraints
  - Maximal depth is 40cm
  - You can change how many active (scintillator) and passive layers (lead) you and their thickness.
  - You can change the fraction of dead channels and the noise
  - Cost of calorimeter depends on amount of scintillator, number of channels, noise and fraction of dead channels.
- Notebook should simply run in your web browser from link in agenda
- You can also install locally following instructions on linked GitHub repository
- This is **not** a realistic calorimeter simulation, but you can read and understand the whole code in 30 minutes. See Geant4 lectures for the real way to do this.

# Visualisation shows a single 100 GeV electron

## Calorimeter Design



You have \$450,000

Ready, Set, Go

80 minutes!