

Detector setup for charm correlations

How to precisely measure billions of Pb+Pb collisions?

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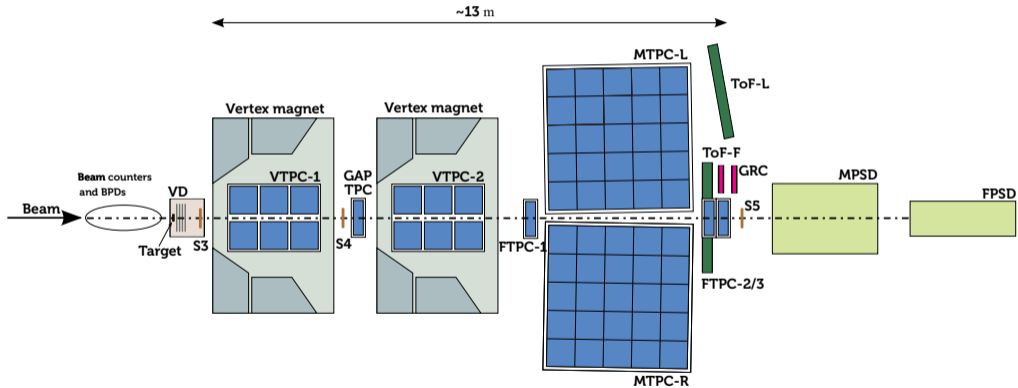
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Introduction

- This talk is not supposed to be a proposal of any kind
- I will just present loose ideas of how the Experiment can look like
- It is supposed to be the **onset of brainstorm**

Current setup



What do we have and what do we want?

Minimal setup for charm correlation measurements:

We have:

- VD with ALPIDE sensors in B field up to 0.1T
- TPC-based tracking system with PID in B field up to 1.5T
- Hadron calorimeter for centrality determination
- Pb beam rates of up to 100kHz
- Event rates of up to 1.6kHz

We want:

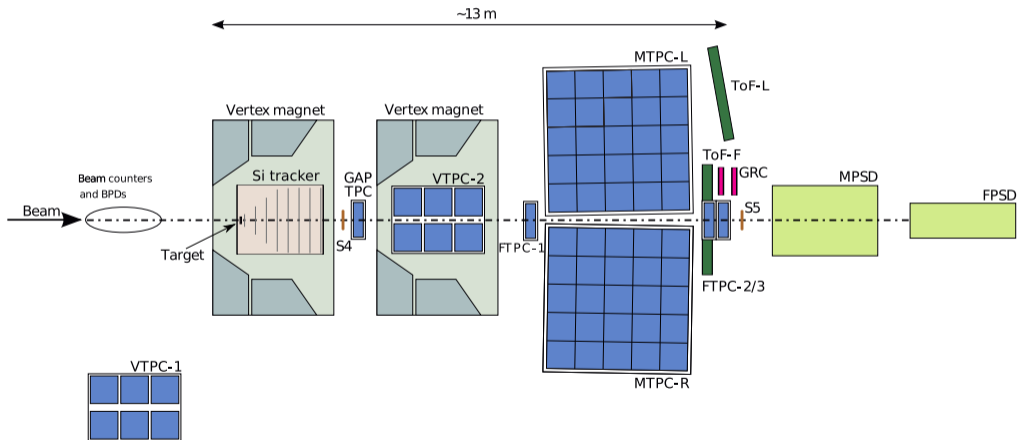
- Silicon tracker in B field of 1.5T
- Hadron calorimeter for centrality determination?
- Pb beam rates of several MHz
- Event rates of up to 50kHz

Possibility 1.

Si tracker in the magnetic field:

- Replace VTPC-1 with a large-surface Si detector
- Keep the rest of the TPC tracking system
- Dedicated charm runs without TPC \longrightarrow keep acceptance and PID capabilities for neutrino runs
- No PID for charm runs

Layout 1.

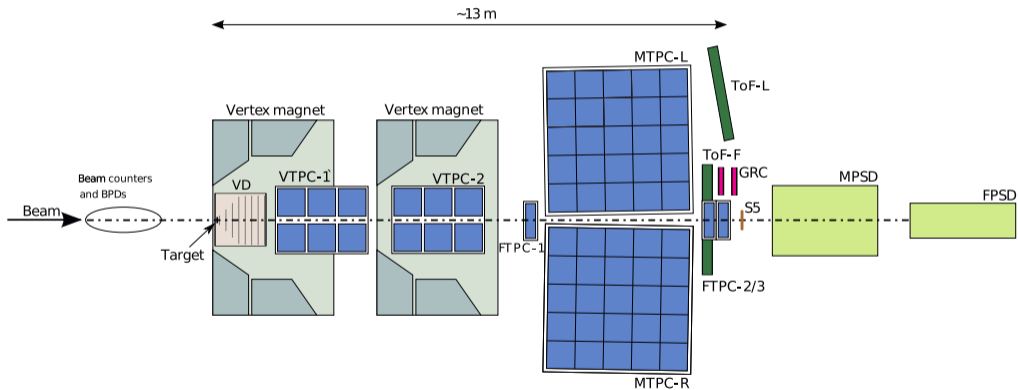


Possibility 2.

Si tracker alternative:

- Due to possible limitations (cost, availability, etc.) of the Si sensors we may want to consider a smaller area vertex tracker
- It would leave a lot of space in VERTEX-1 magnet
- Why don't we fill it up with a TPC?
- If we are building a new one we may go to GEM-based amplification
- no gating → continuous readout possible

Layout 2.



Thank You.