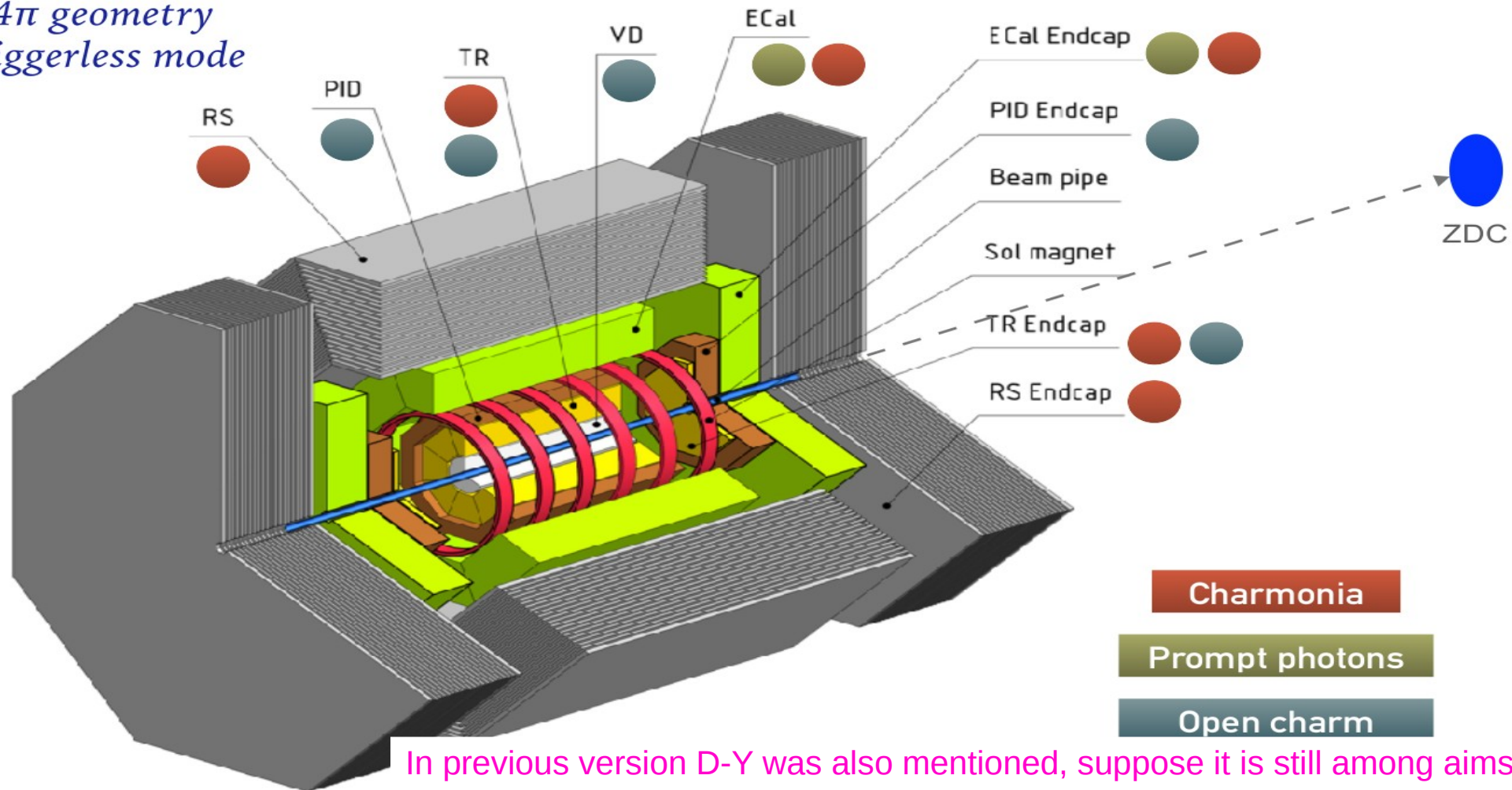




Remarks on SPD configuration

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$\sim 4\pi$ geometry
Triggerless mode



? what is a reason to design general-purpose setup for a narrow (dedicated) physics program aimed for lepton-photon detection?

i.e. why to build a setup to measure 'everything' but with limited quality instead of a construction of dedicated setup including components which well correspond to the physics program?

J/psi, psi' and Drell-Yan

→ di-electrons

negligible chances to detect them in forward direction due to proton remnants, γ from π^0 , Dalitz-decays...

→ skip components intended for forward di-electrons (use of RICH is unlikely)

→ di-muons

hard to detect muons in barrel because of: an absorber (loss of 0.5-0.7 GeV and worse momentum resolution); muons at such beam energies are relatively soft and J/psi pT small; punch-through...

I.e. physics gain doesn't correlate with required efforts

Direct photons

- unlikely to detect them in forward direction (for the same reasons as for D-Y)
- a bit hard the tracking system for them and electrons as well

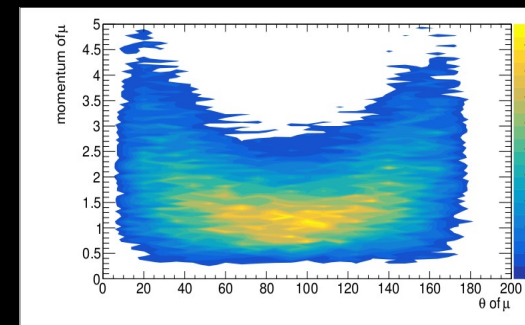
Open charm

→ rely upon secondary vertex reconstruction for relatively soft D-mesons?



Proceed as:

- muons only in forward, with possibility to reconstruct J/psi at mid-rapidity - one muon identified in forward, another one (non-identified) in barrel
- electrons/photons only in barrel
- D-mesons (mainly $D^0 \rightarrow K\pi$, I guess) via kaon identification by TOF



Then a design becomes as follows

- muon arm a'la ALICE
- barrel a'la CrystallBall with projectile geometry (as fine granularity as the means allow) crystals for best energy resolution
- several layers of MAPS for barrel

Barrel part inside a solenoid

Some 'pro':

- the trigger is easily organized via a fast trigger planes of muon-arm OR an energy threshold in crystal OR a presence of TOF signal in barrel
- MAPS accuracy allows to minimize number of layers
- MAPS allows to lower a solenoid field due to the detector accuracy
- lower expenses for the detector operation

and

- an extension of physics program to meson spectroscopy via two-photon decays arises

A proposal is to consider a possibility to realize the setup as a feasibility – for instance, a prompt photon studies can be proceeded W/O magnetic field and W/O inner detectors – simply just as a crystal-ball