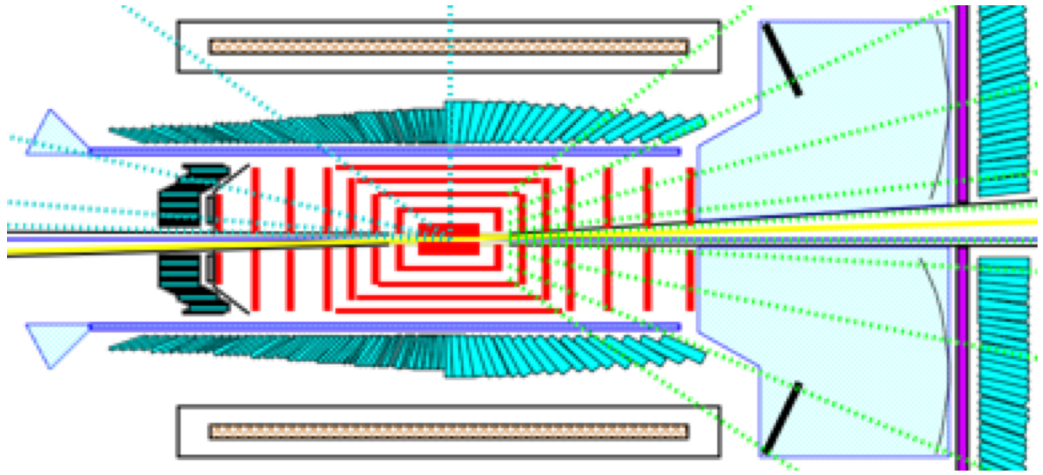
Tracking, barrel PID, and min P_T in a compact solenoid

- Low-pT particles “curl up” inside the tracker and do not reach the barrel PID or EMcal

lowest p_T	0.5 Tesla	1 Tesla	3 Tesla
with PID @1m	75 MeV	225 MeV	450 MeV
no PID	25 MeV	50 MeV	100 MeV

- Using a compact Si-tracker allows moving the main barrel PID system closer, improving low-p_T acceptance at high B.
  - 0.5 m vs 1 m in the YR table
  - This also reduces the cost of the DIRC



- The kaon threshold in the DIRC is 0.47 GeV/c, but in the 0.2-0.5 GeV/c range it can operate in threshold mode, separating pions from kaons and protons
  - K/p ID n the 0.2-0.5 GeV/c range is not a strong physics driver
  - All momenta above are |p}, not p_T