Update on SVT Background simulation with Bruno

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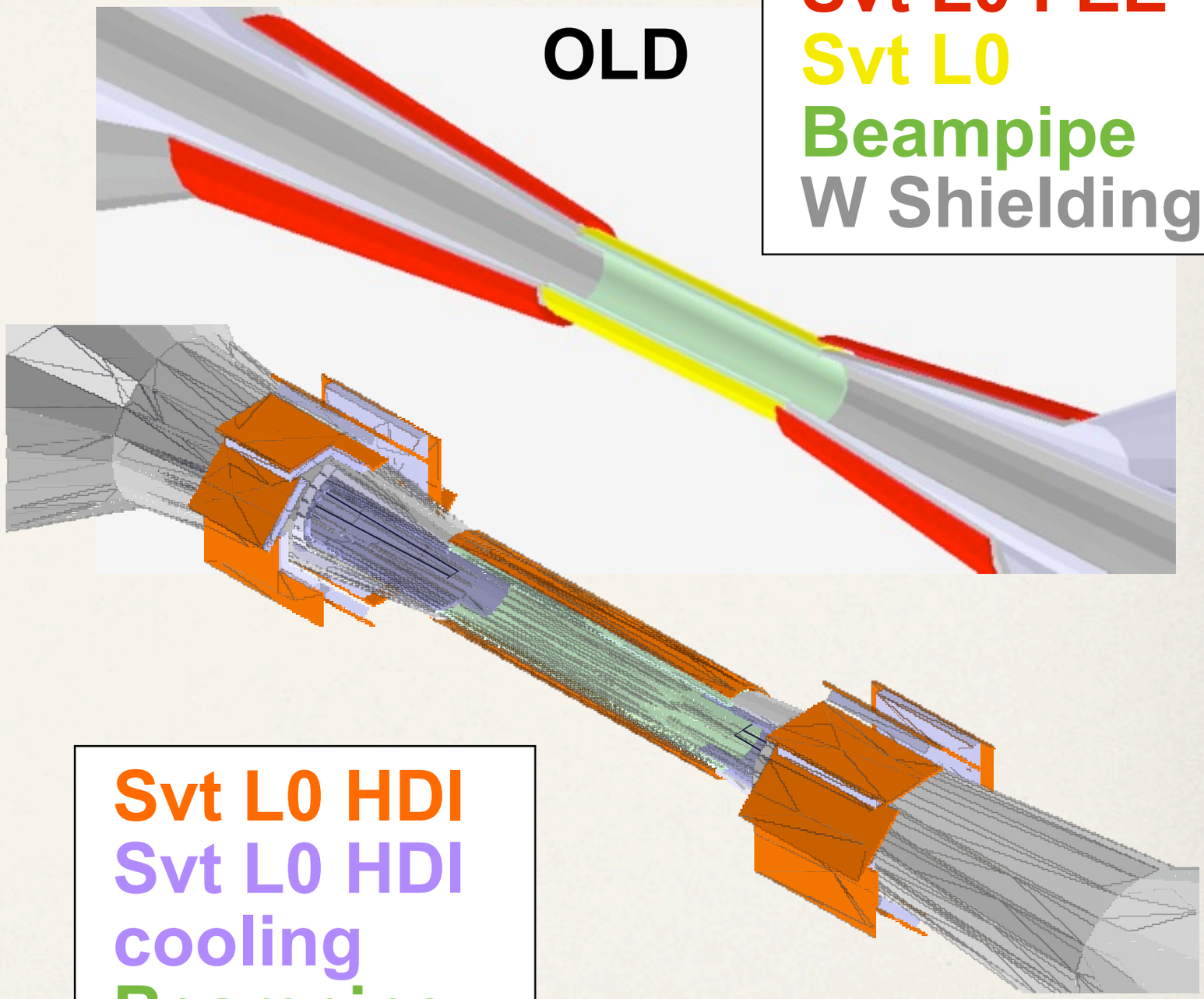
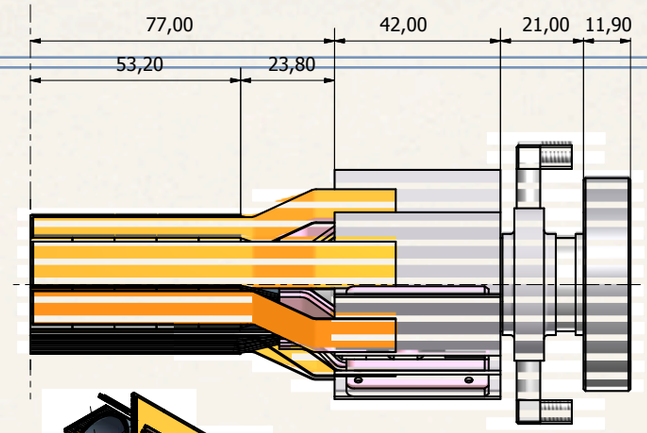
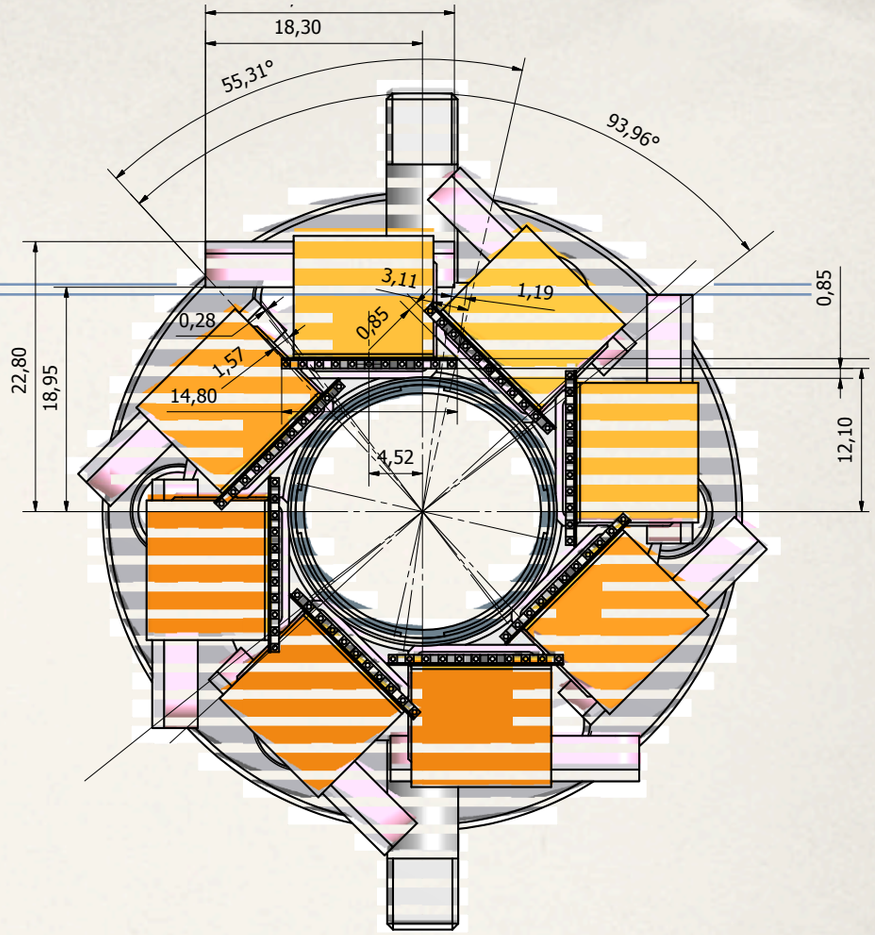
L0 electronics

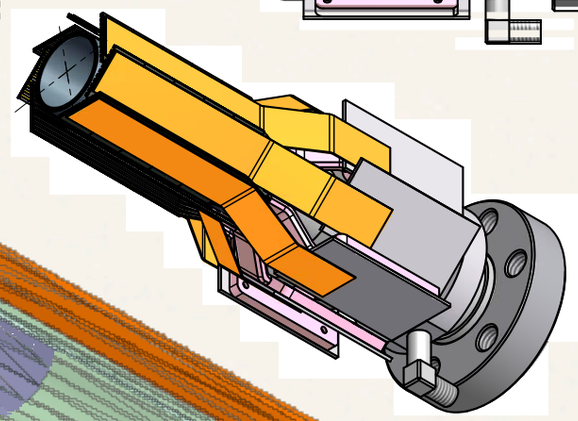
- New drawing from F. Bosi for the IP and L0 region
- Pin-wheeled HDIs silicon with Al cooling plate
- Fit inside previous SVT L0 container volume
- Implemented using GDML



L0 electronics







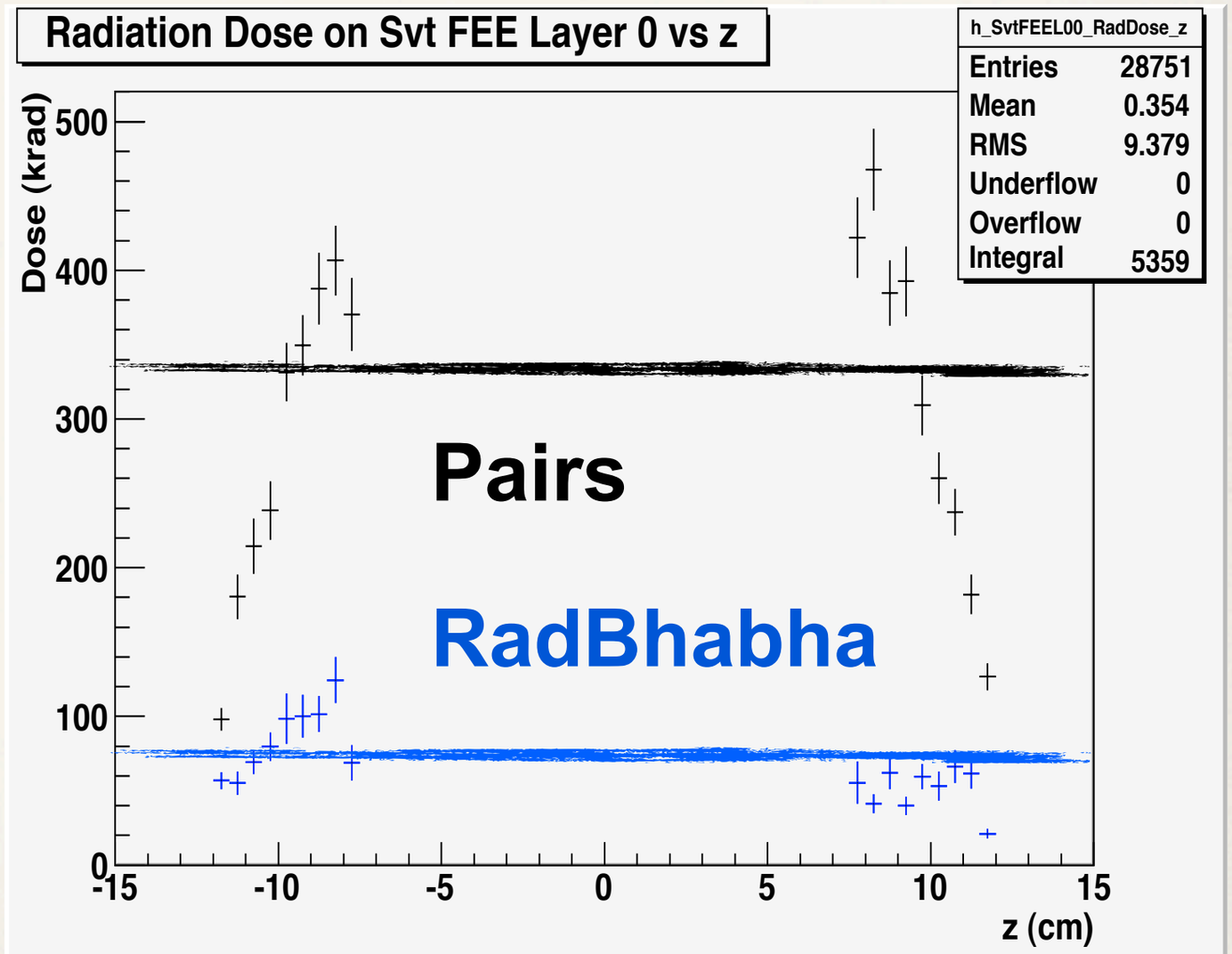
Svt L0 HDI
Svt L0 HDI cooling
Beampipe
W Shielding

- W shielding beaks have to be removed to allocate the new beampipe design by F. Bosi

Radiation on L0 electronics

- Relevant information: Integrated Dose (1 nominal year)
- Pairs (40k evts) and bbbrem (10k evts) bkgs, B field ON

- Average dose:
  - Pairs, **319 krad**, (consistent with previous test, 460)
  - RadBhabha, **72 krad**
  - Touschek still missing



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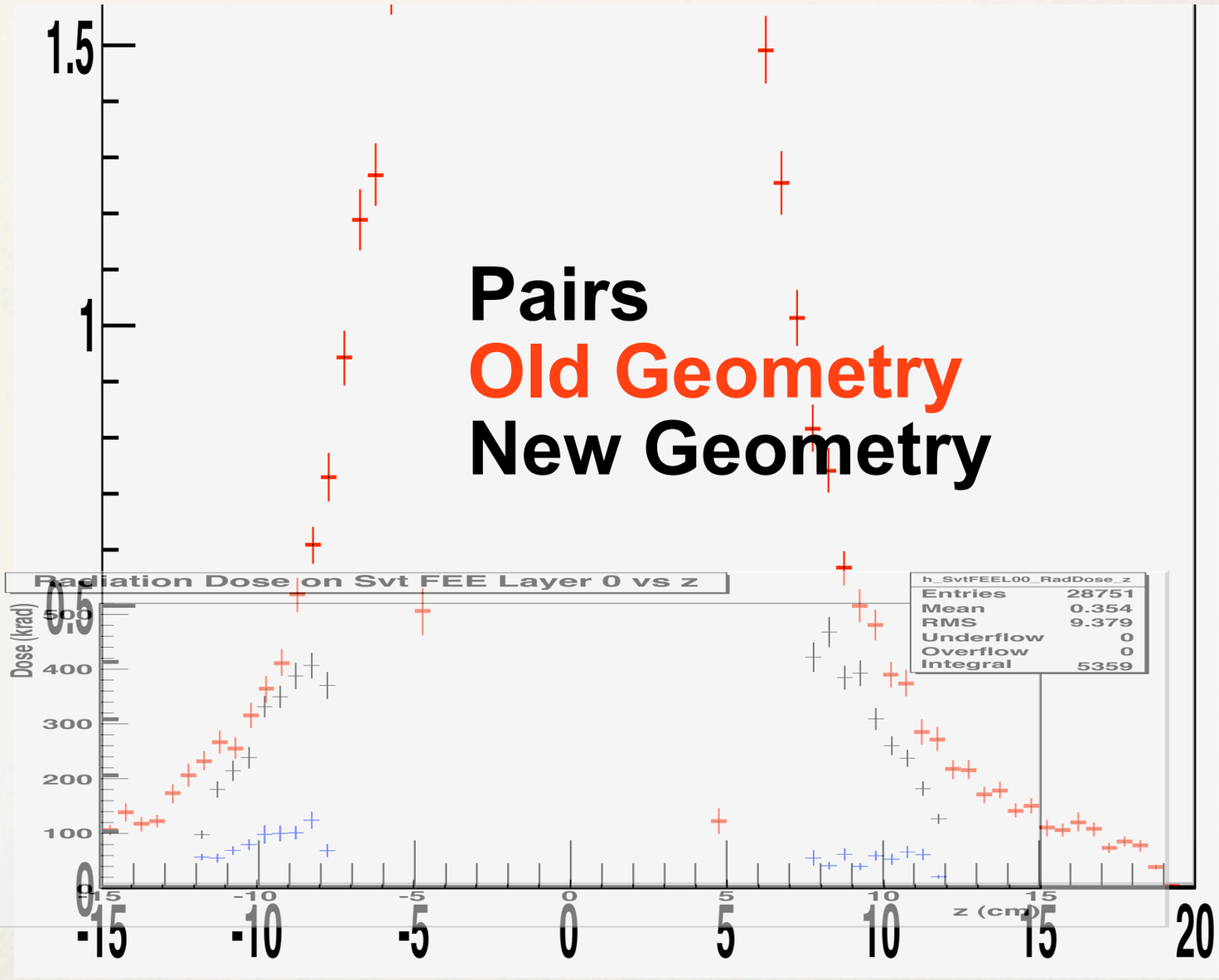
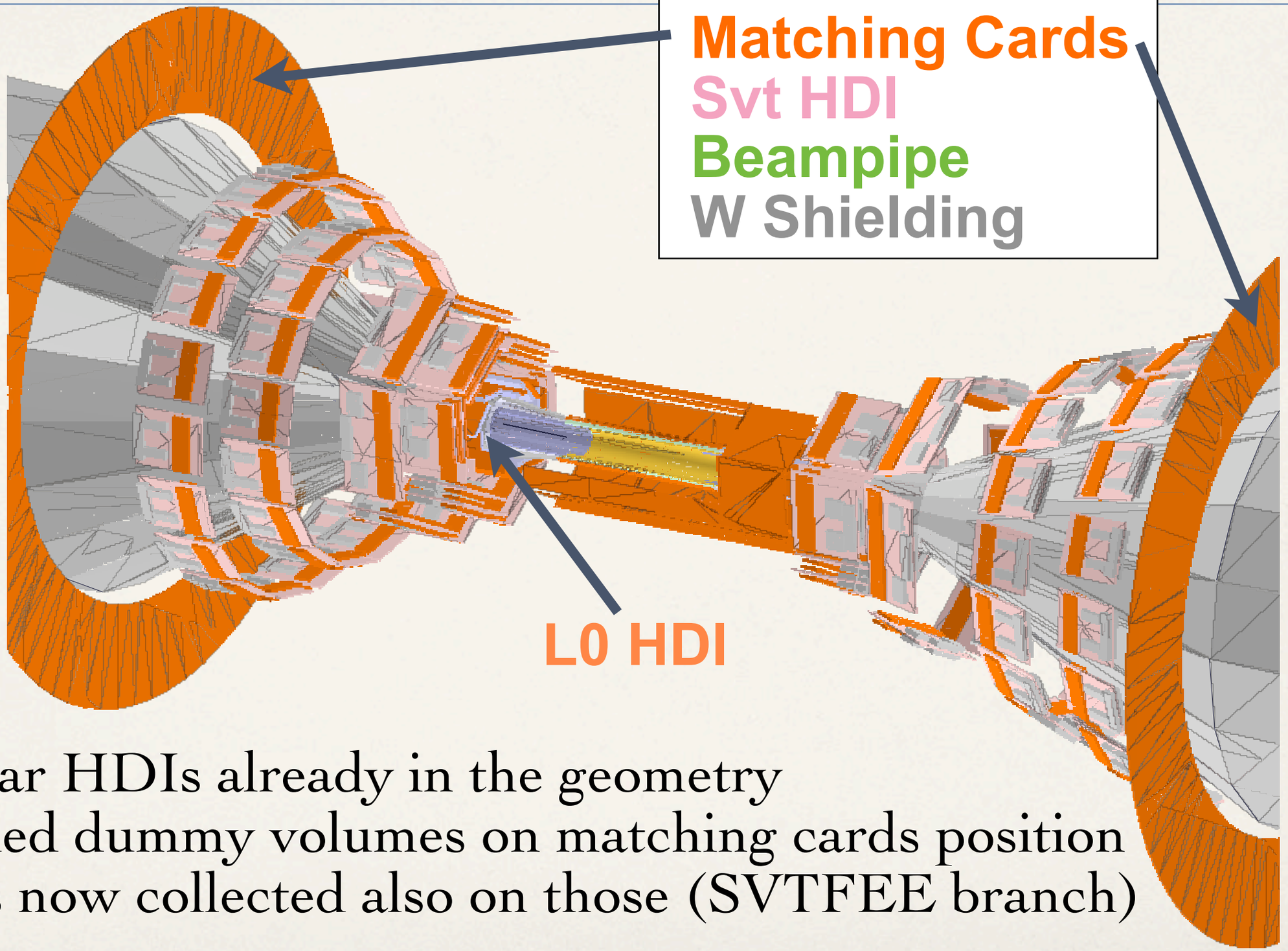


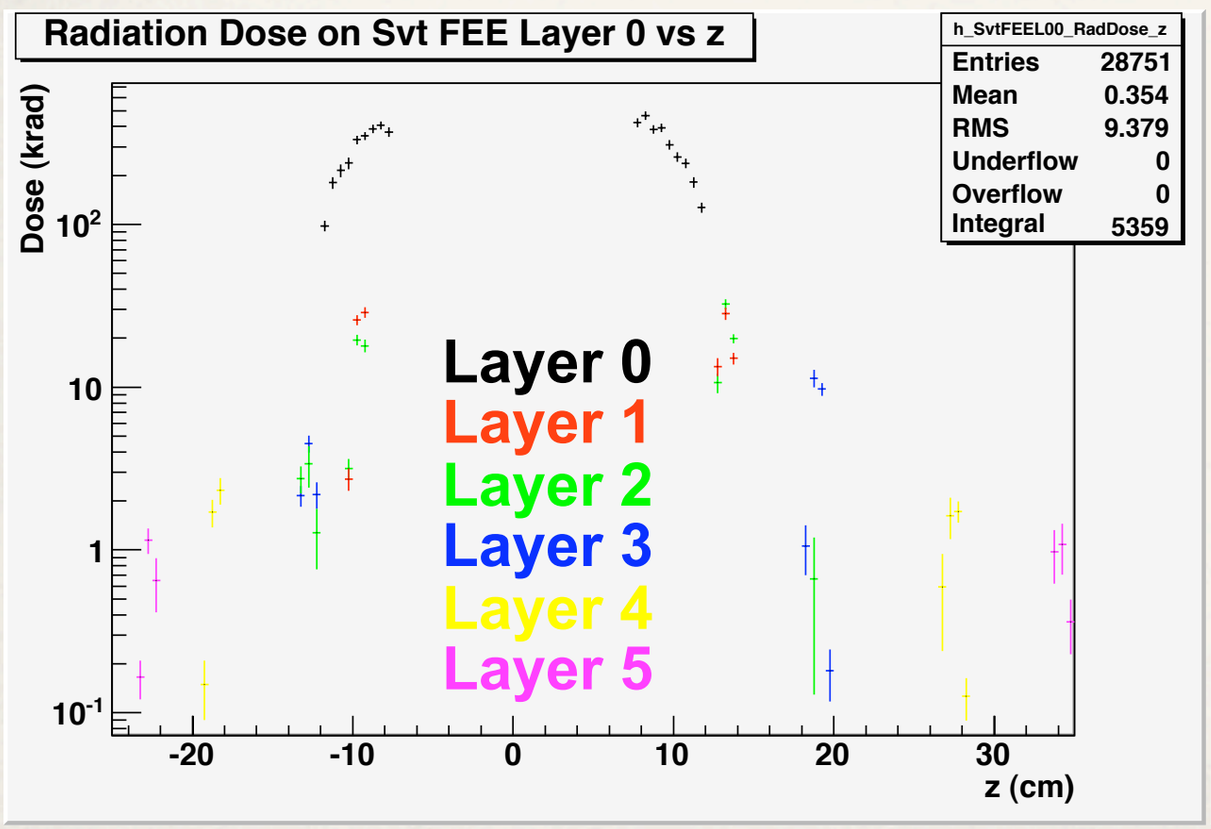
SVT electronics

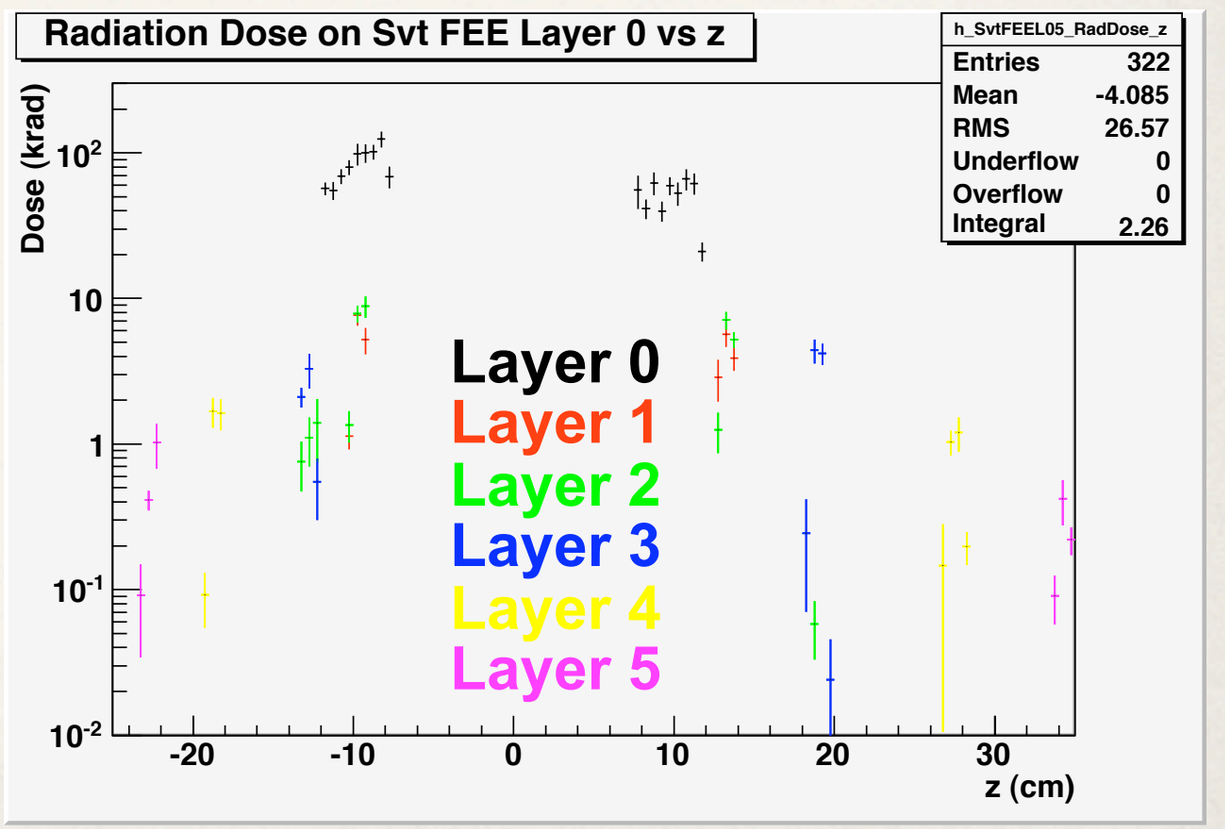


- Babar HDIs already in the geometry
- Added dummy volumes on matching cards position
- Hits now collected also on those (SVTFEE branch)

Radiation on SVT HDI

Av. Dose (krad)	0	1	2	3	4	5
Pairs	319	45	44	12	3	2
RadBhabha	72	10	14	6	2	1





Radiation on SVT matching cards

- Dummy volumes to estimate the dose, thin silicon ring
- Average dose (low statistics):
  - Pairs bkg, **0.5 krad**
  - RadBhabha bkg, **1.4 krad**
- Easy to implement volume more similar to the real one, radial cards

Conclusions

- Implemented new HDI geometry according new IR-L0 design and collected hits from all SVT HDI's
- Radiation doses (only Pairs and RadBhabha, no Touschek):
  - below **500 krad for L0**, consistent with previous test
  - below **50 krad for outer layers**
  - around **2 krad for matching cards** (dummy volumes)
  - phi asymmetries? maybe but only from RadBhabha or other bkg sources

Phi-Z cluster distribution (L 0,1,2)

- RadBhabha (Feb production)
- Some spots on the back edge, more on midplane neg-x axis
- The arrow on z scale points to the average cluster rate