Latest results on SLAC phase 2 collimators

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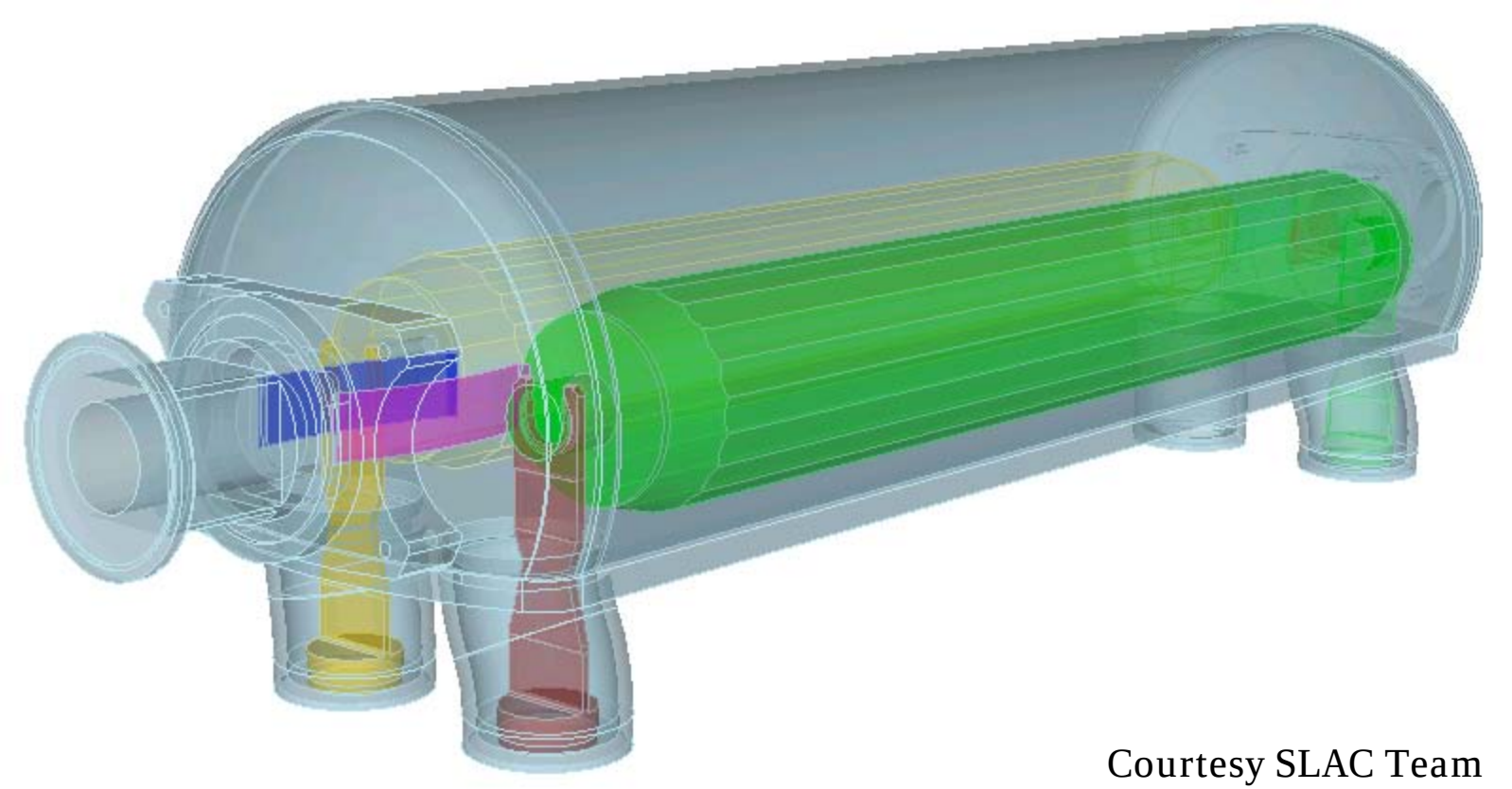
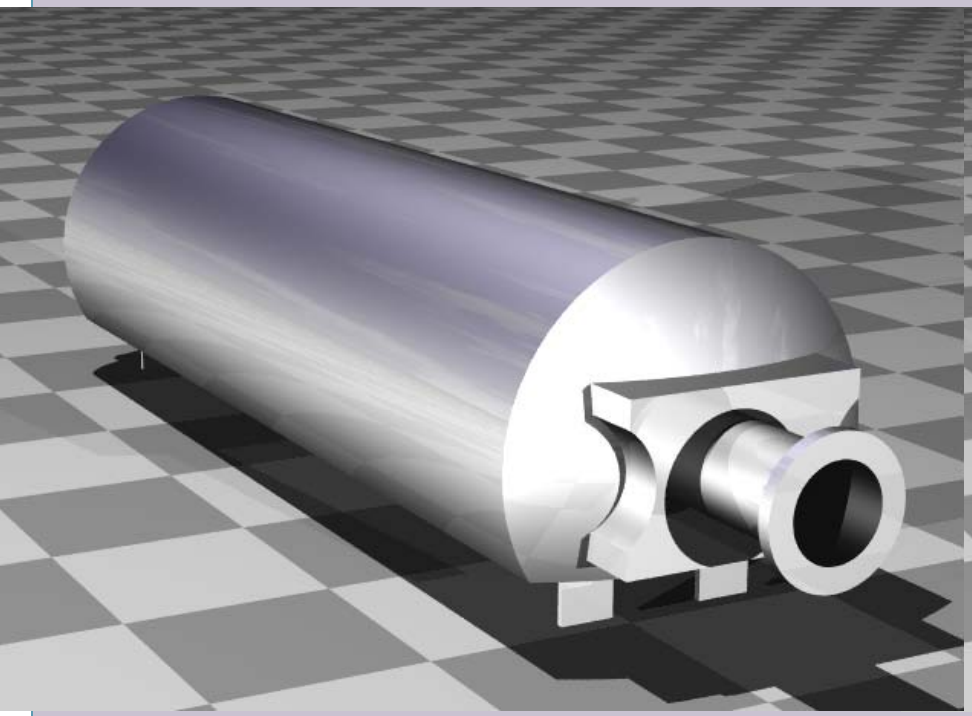
LHC COLLIMATION WORKING GROUP
15 FEBRUARY 2010

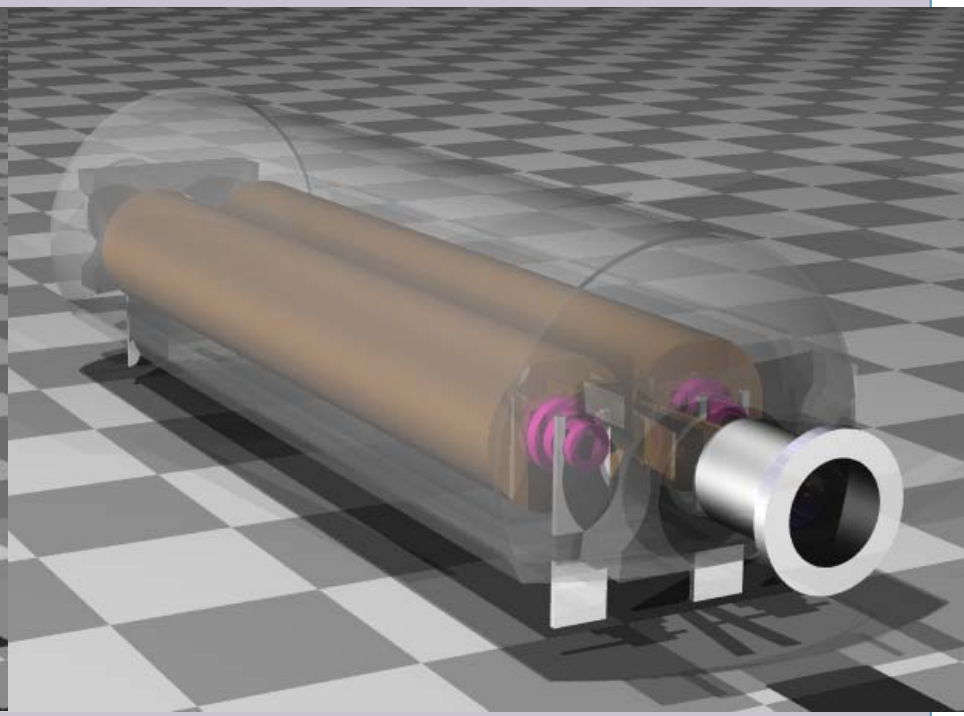
SLAC Tank



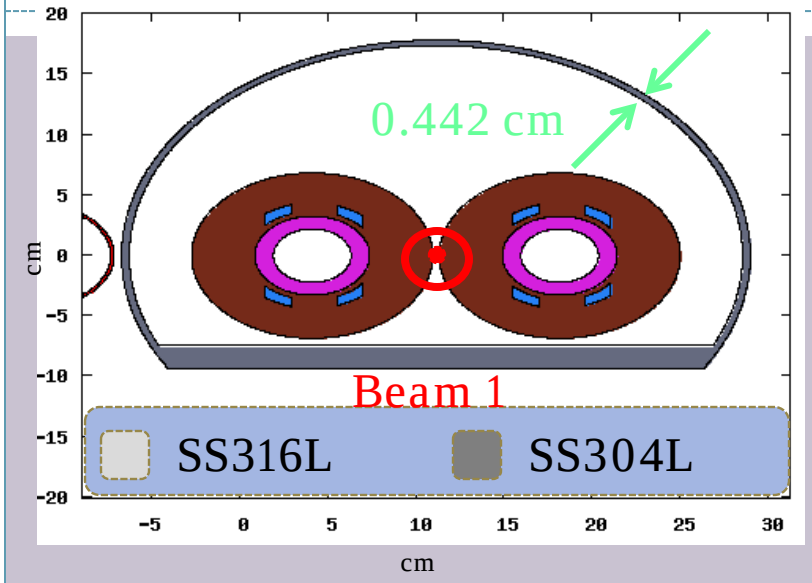
Courtesy SLAC Team

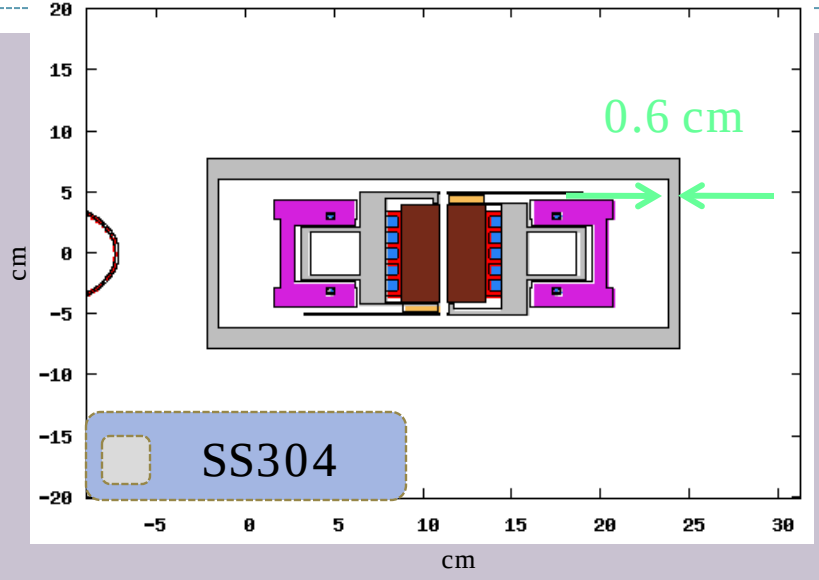
FLUKA model – SLAC tank

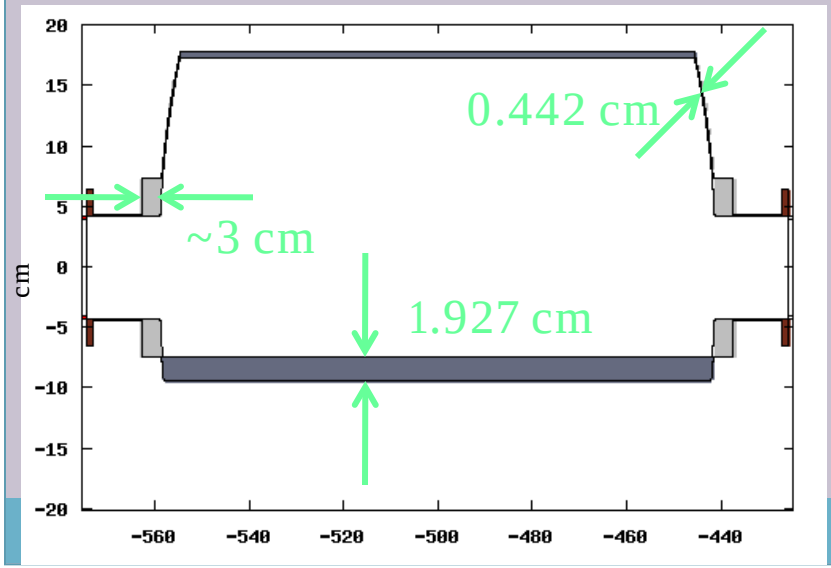


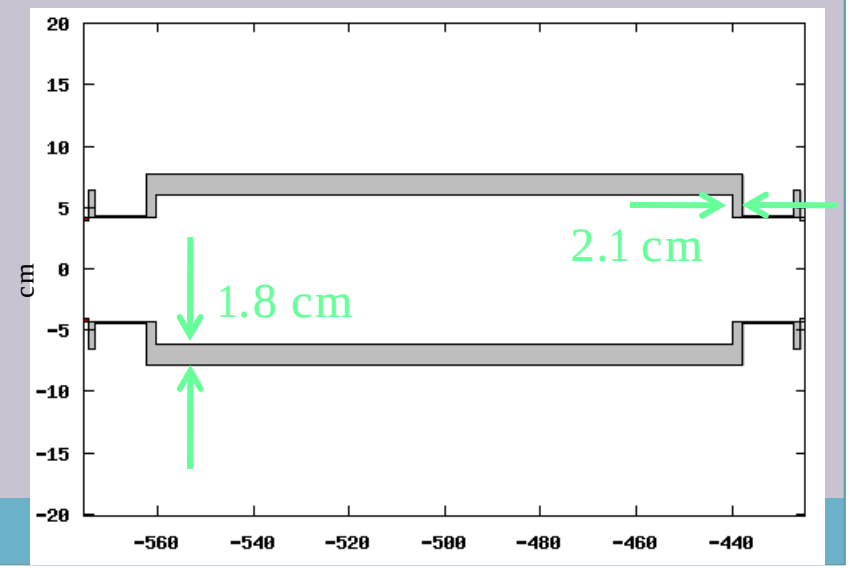


SLAC tank vs CERN Ph2 tank



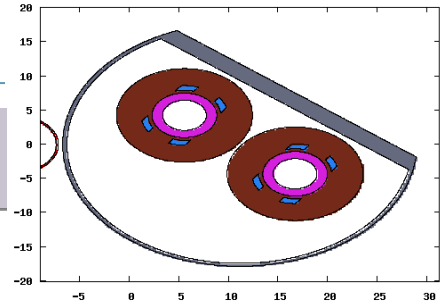


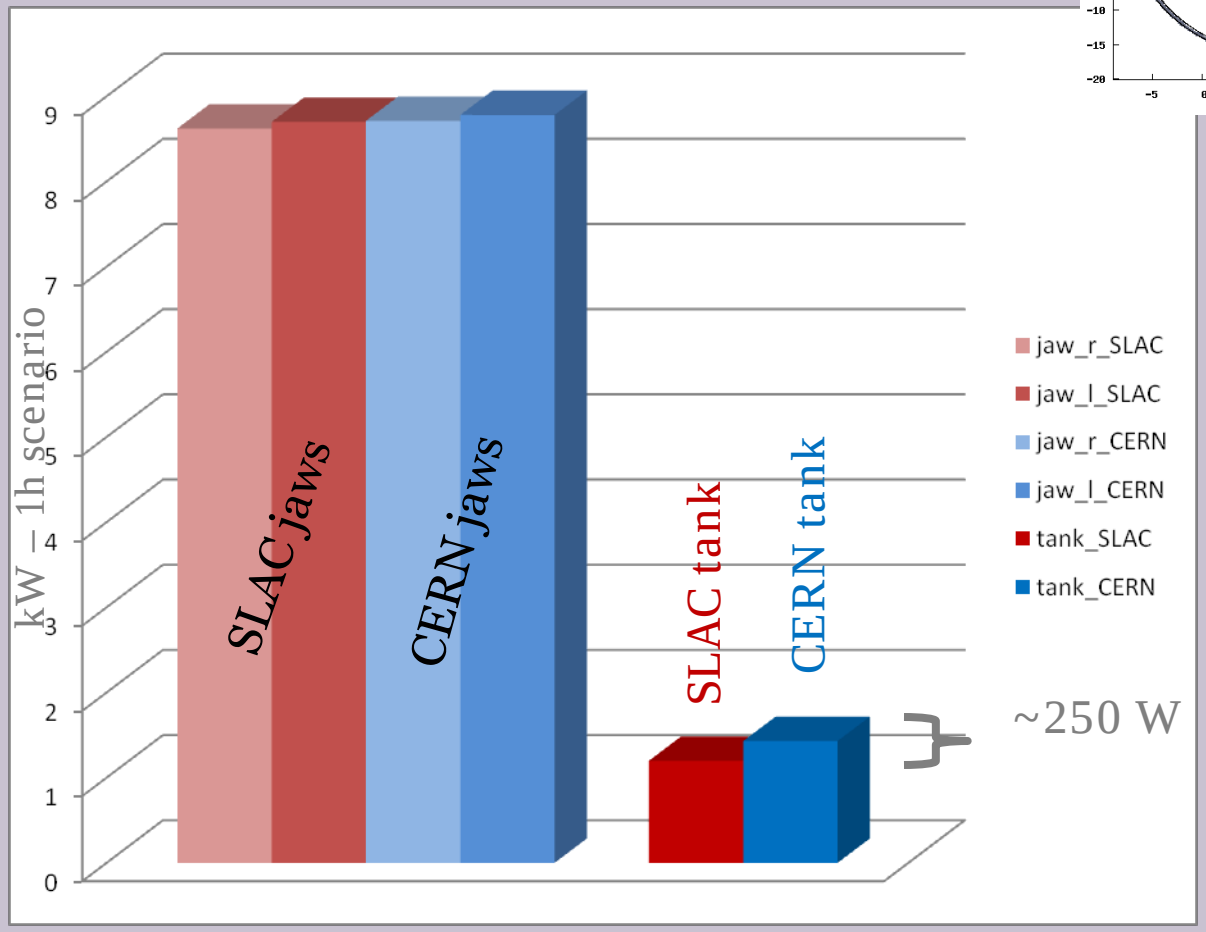




Energy deposition – TCSMA6L7.B1

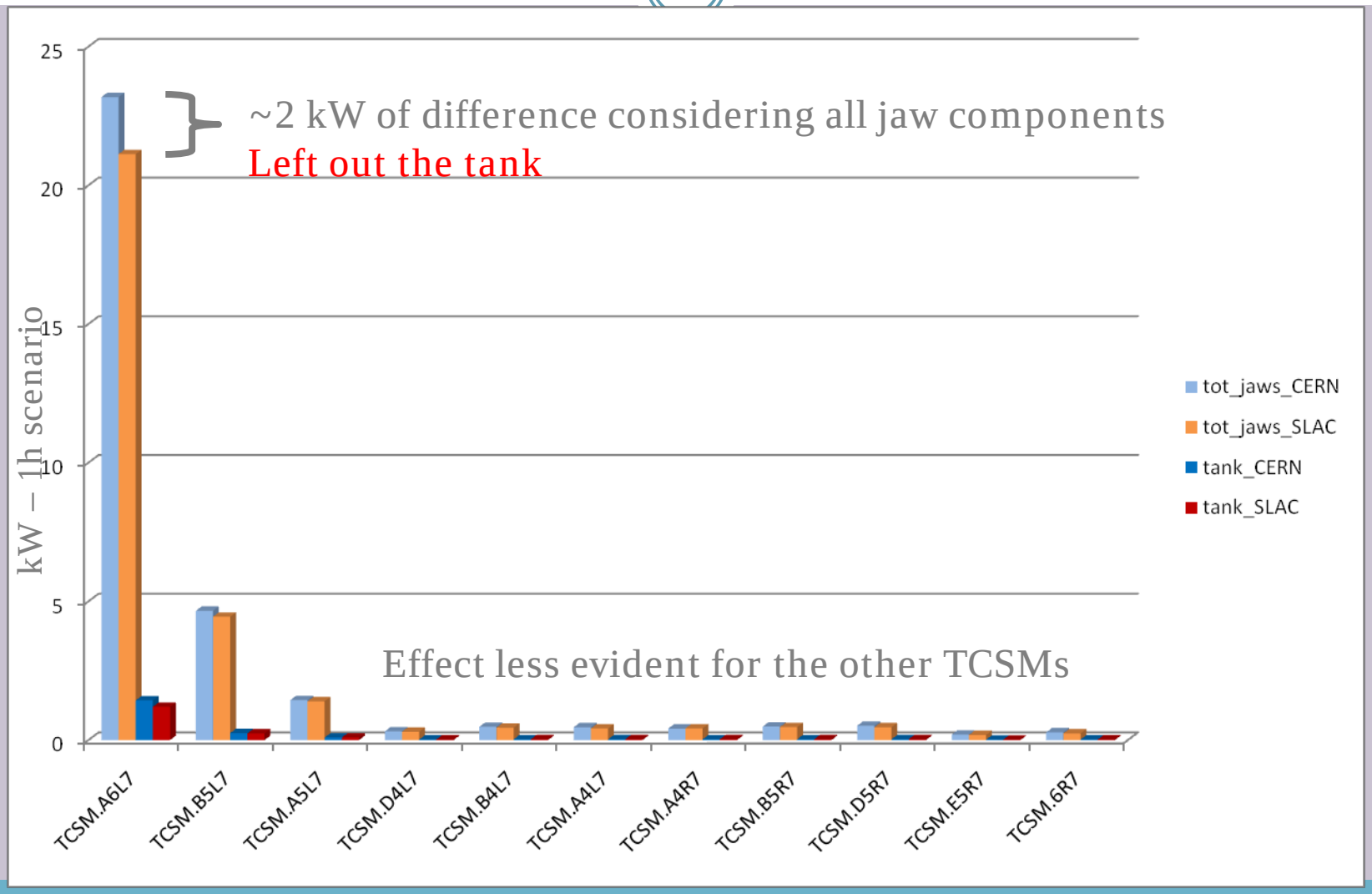
Nom. Horizontal halo



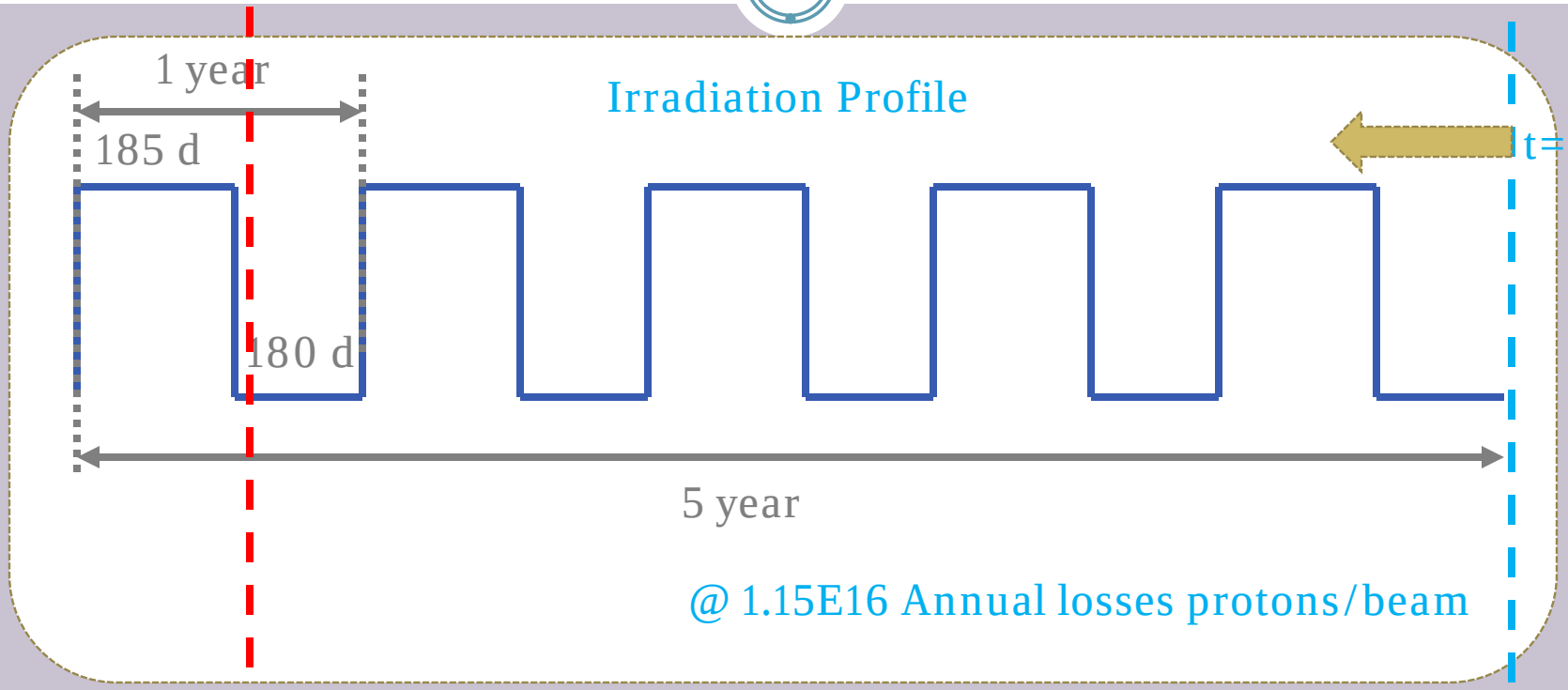


Energy deposition

Nom. Horizontal halo



Dose Rate analysis



After 1 day – first year of irradiation

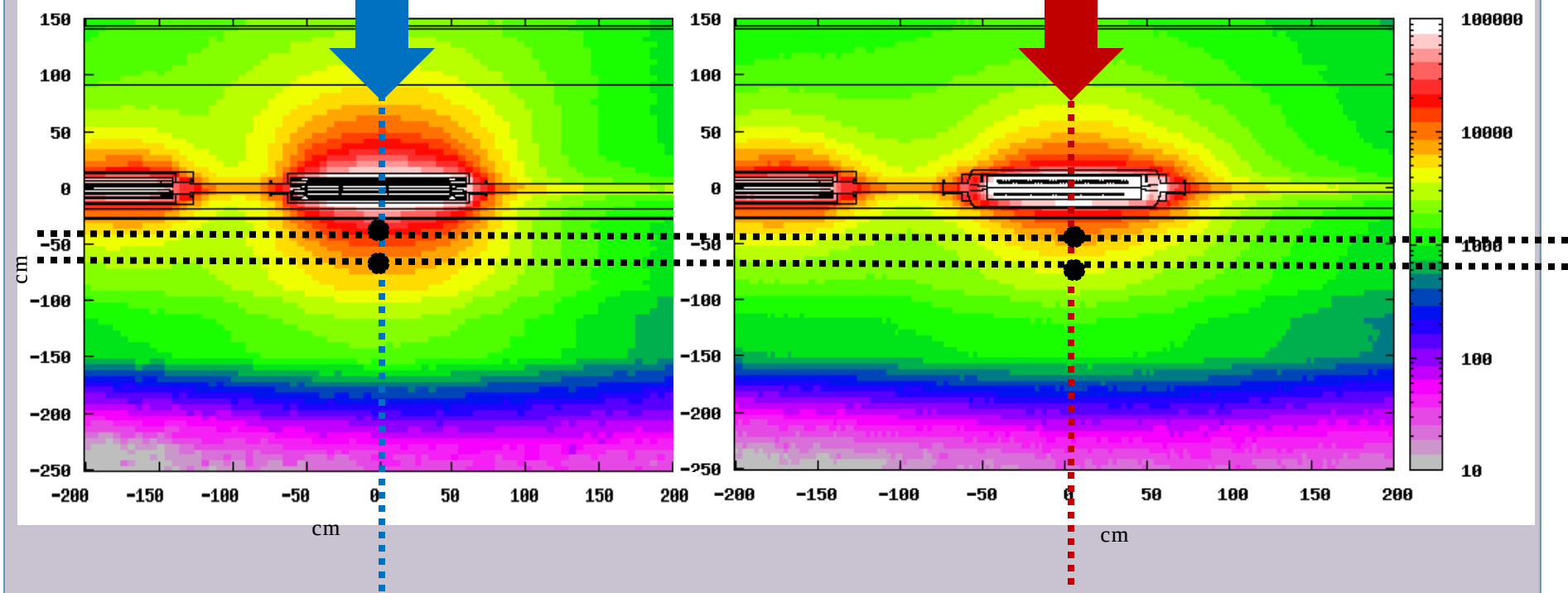
Each year …….after 1 day, 1 month, 4 months of cooling

Dose Rate results on TCSMA6L7 (1)

CERN design

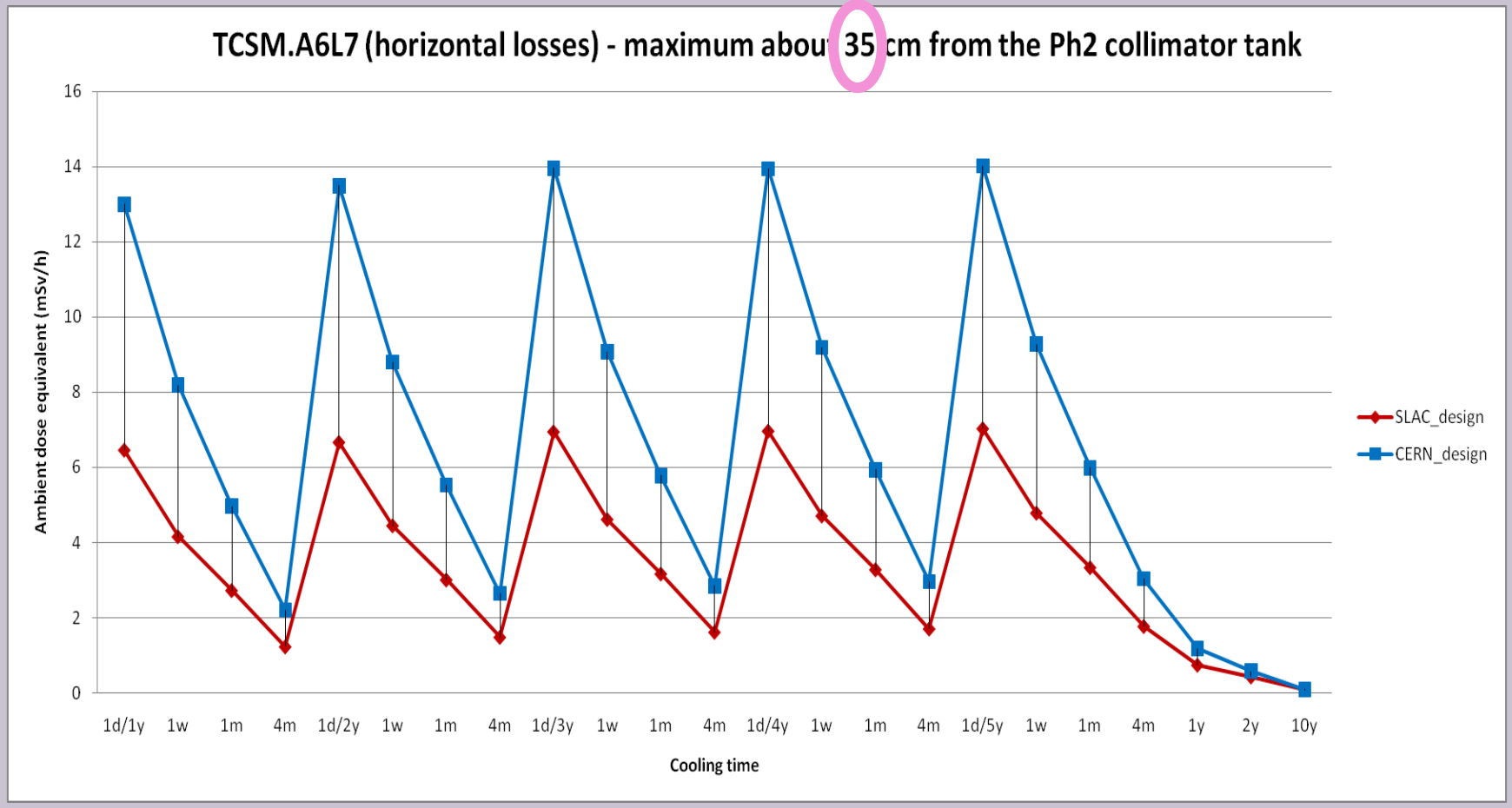
SLAC design

Ambient dose equivalent µSv/h



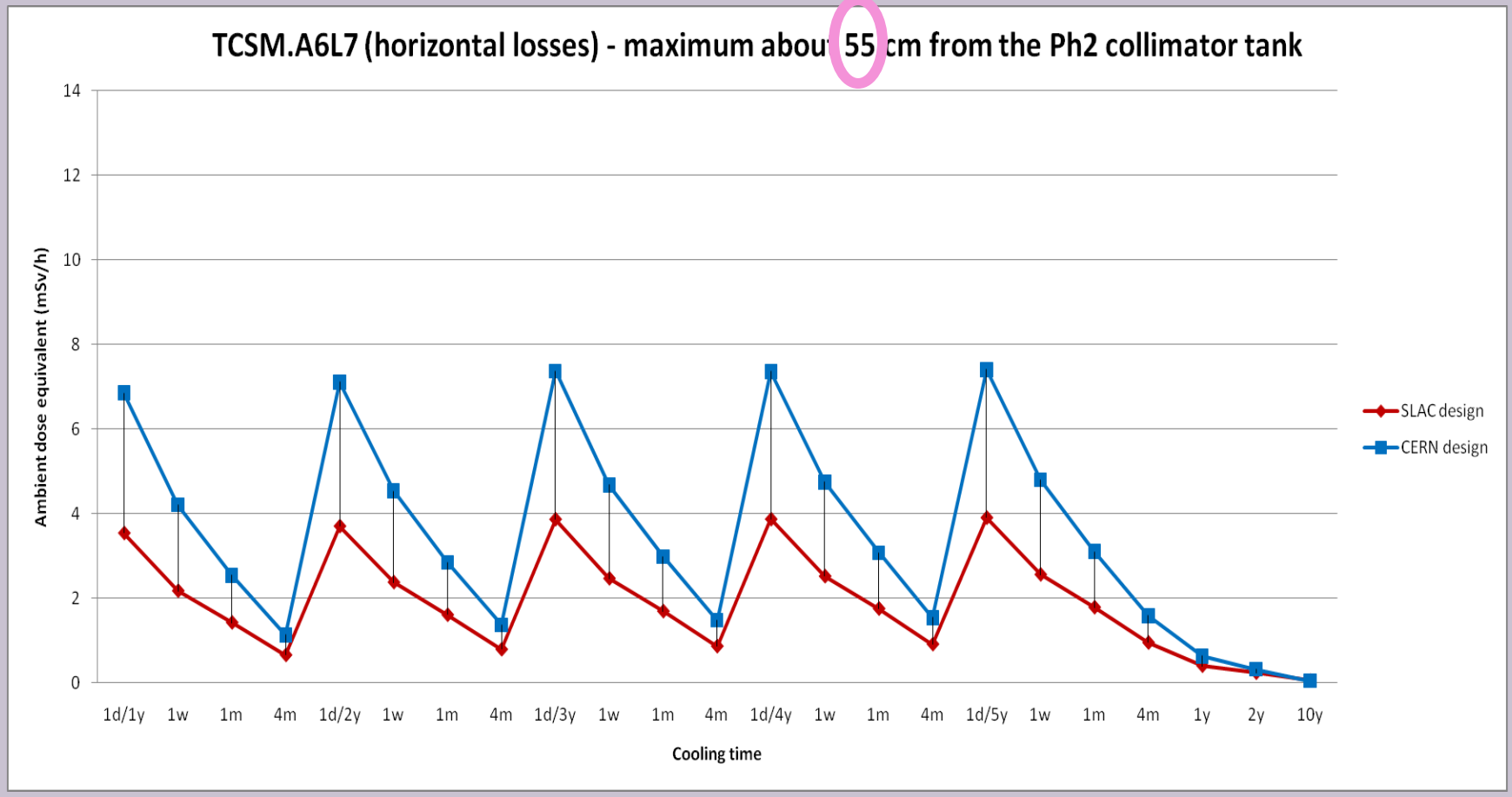
After 1 day of cooling time @ 1.15E16 annual losses

Dose Rate results on TCSMA6L7 (2)



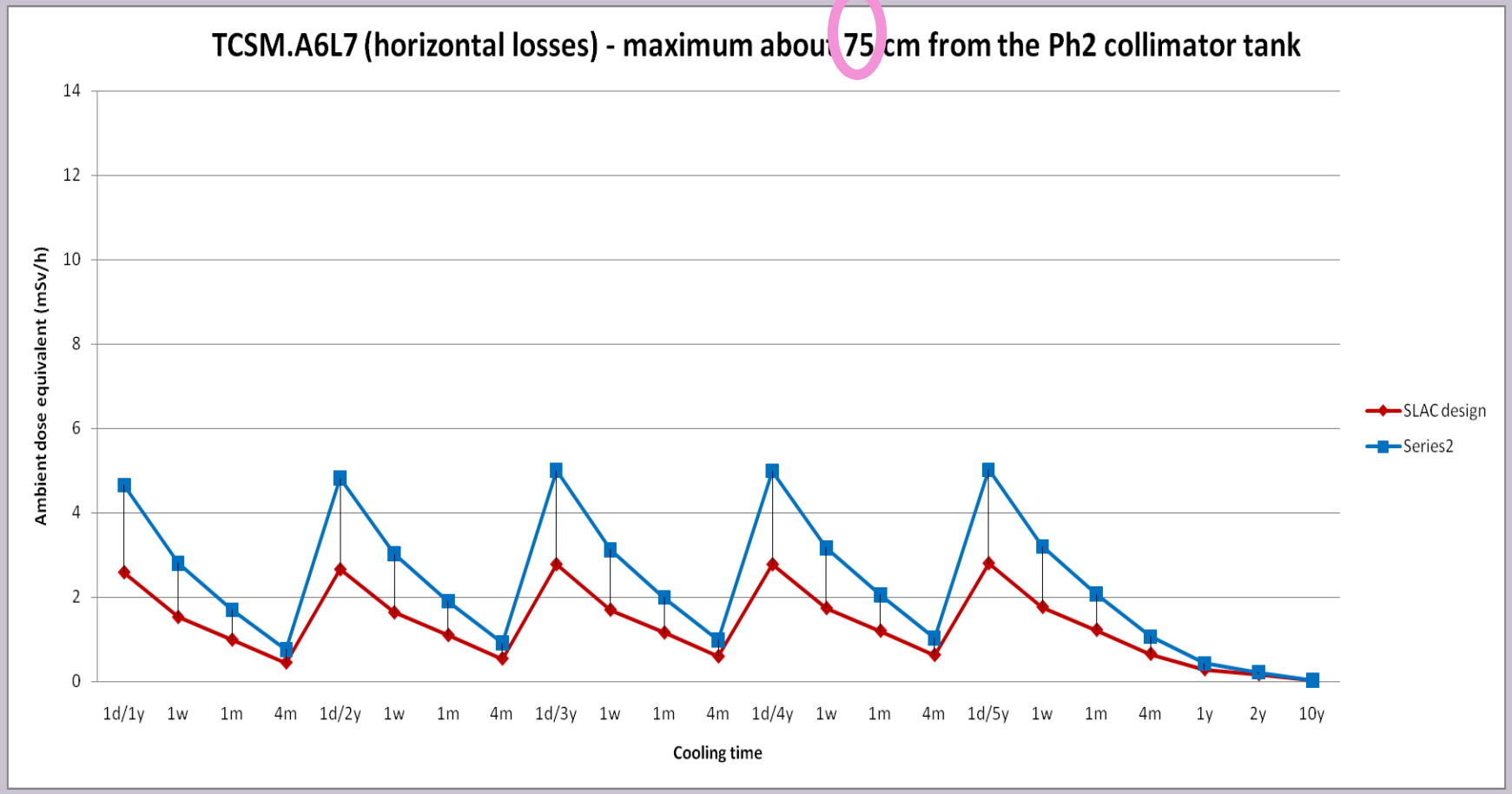
Dose Rate results on TCSMA6L7 (2)

..... + 20cm after



Dose Rate results on TCSMA6L7 (3)

..... + 20cm after



Conclusions

- For the TCSM.A6L7.B1, we have about 2.3 kW of difference in energy deposition between the SLAC and CERN design.

- Results from EDMS 863919 shows at 50 cm from the TCP.C6L7.B1 tank (the higher contributor) value of about 4.5 mSv/h → at the same location of about 50 cm from the TCSM.A6L7.B1 tank, we have about a factor 1.5 with the CERN design and a factor of 0.8-1 with the SLAC design. → Impact on *Intervention time*

  NB: I have not considered here the turn of the SLAC jaws!