setup

All dimension follow real setup

Virtual HyCal

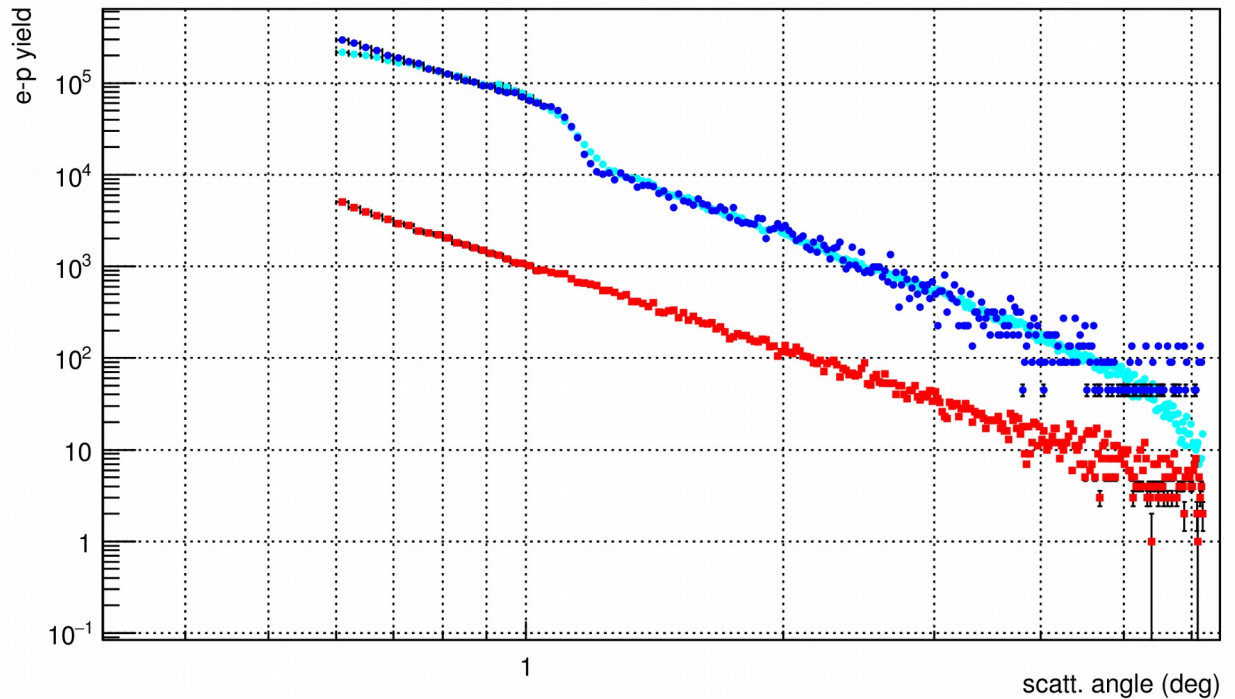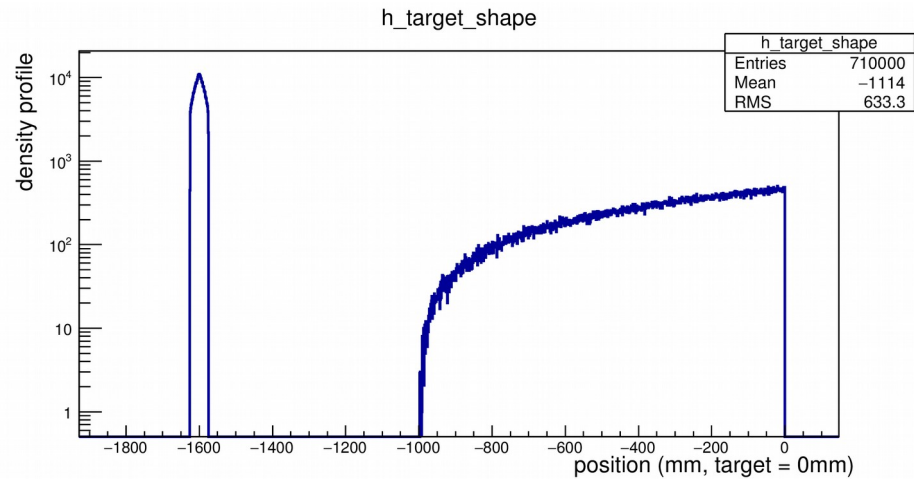Downstream target chamber

Beam pipe

1.6 m

collimator

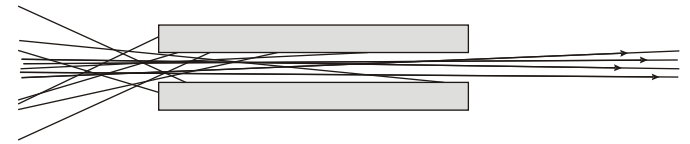Target Assembly

Vacuum Box

Virtual GEM
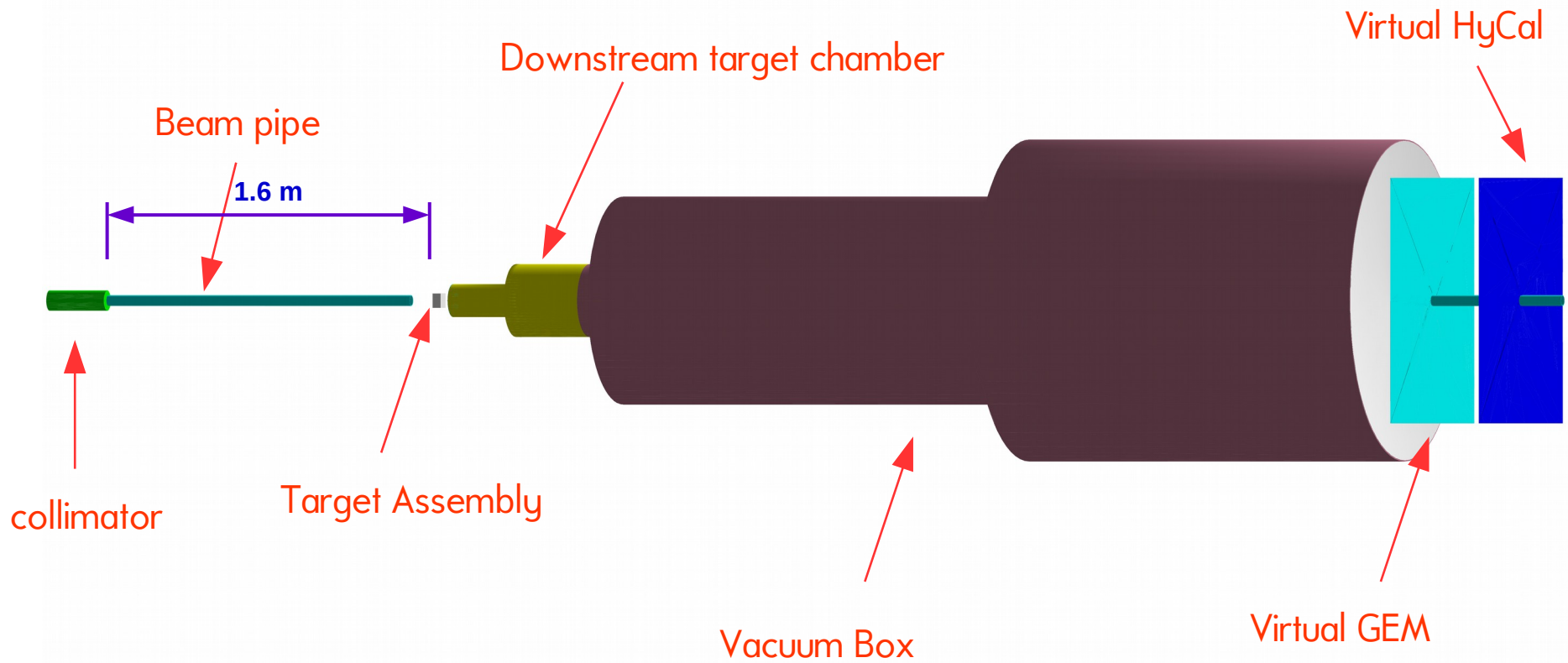
Simulation results

- Residue gas in combination with beam pipe will only have effect on the slope of the background yield line, no bump

- Bump due to a sharp peak at around 1.6m upstream, which is the same location where collimator ends.
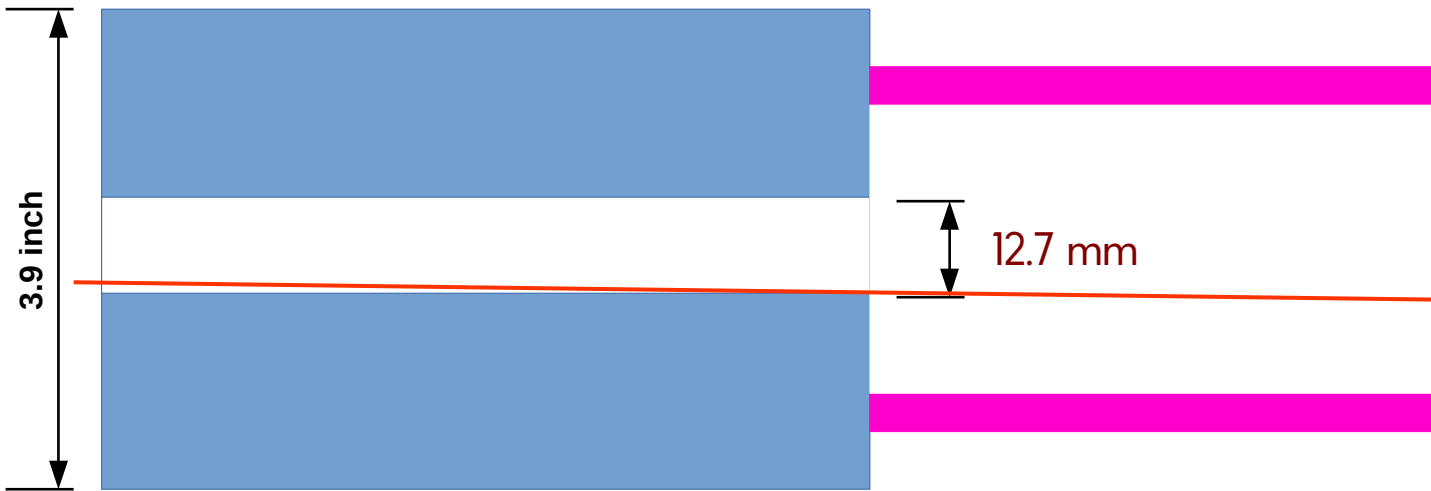
Collimator in experiment

Collimator

11.8 inch

~1.6m to target

3.9 inch

12.7 mm

Collimator

Beam pipe

Beam halo hit the
right edge of collimator

This will likely introduce bump
to the e-p yield line

Collimator in PRad