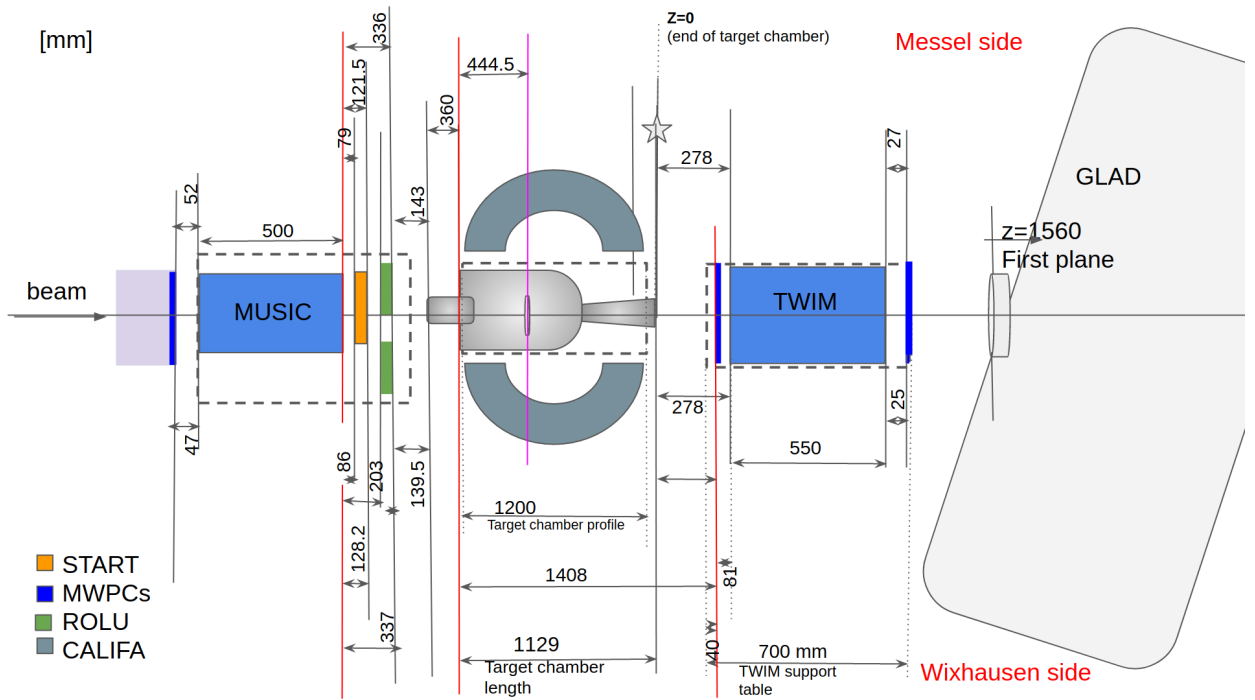
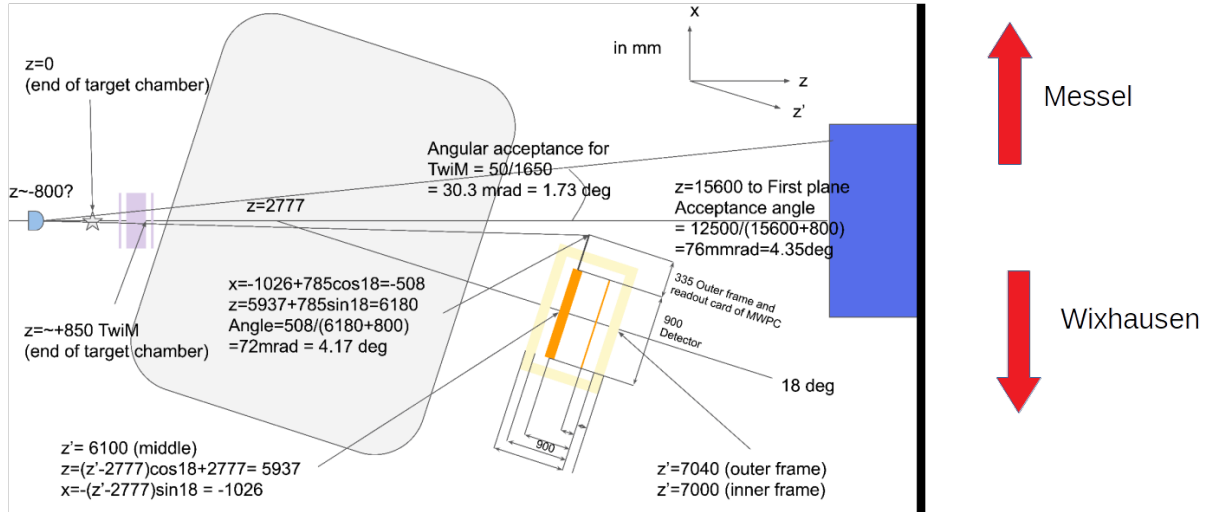


Radius/Momentum Calculation for S444 Experiment February 2020 - Overview

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July 31, 2020

0.1 The Setup



0.1.1 Geometry and relative position of the detectors in the beam direction

Here, the positions are given for the s444 and s467 experiments

z position of the target: $z_T = -684.5 \text{ mm}$
z position of the MWPC in front of the Twin-MUSIC: $z_{M1} = 279 \text{ mm}$
z position of the middle of the Twin-MUSIC: $z_{Twin} = 553 \text{ mm}$
z position of the MWPC after the Twin-MUSIC: $z_{M2} = 854 \text{ mm}$
 α tilted angle of GLAD (14 degrees): $= 0.244 \text{ rad}$
effective length of GLAD: $L_{eff} = 2067 \text{ mm}$
z middle of GLAD $z_{Gm} = 2577 \text{ mm}$
horizontal of the central path (18 degree) $\theta_{out0} = \pi/10 \text{ rad}$
z position of the MWPC after GLAD $z_{M3} = 5937 \text{ mm}$
z position of the ToFwall $z_{ToFW} = 6660.2 \text{ mm}$

Correspondence between the GLAD current and the magnetic field: $I = 3584 \text{ A}$, $B = 2.2 \text{ T}$