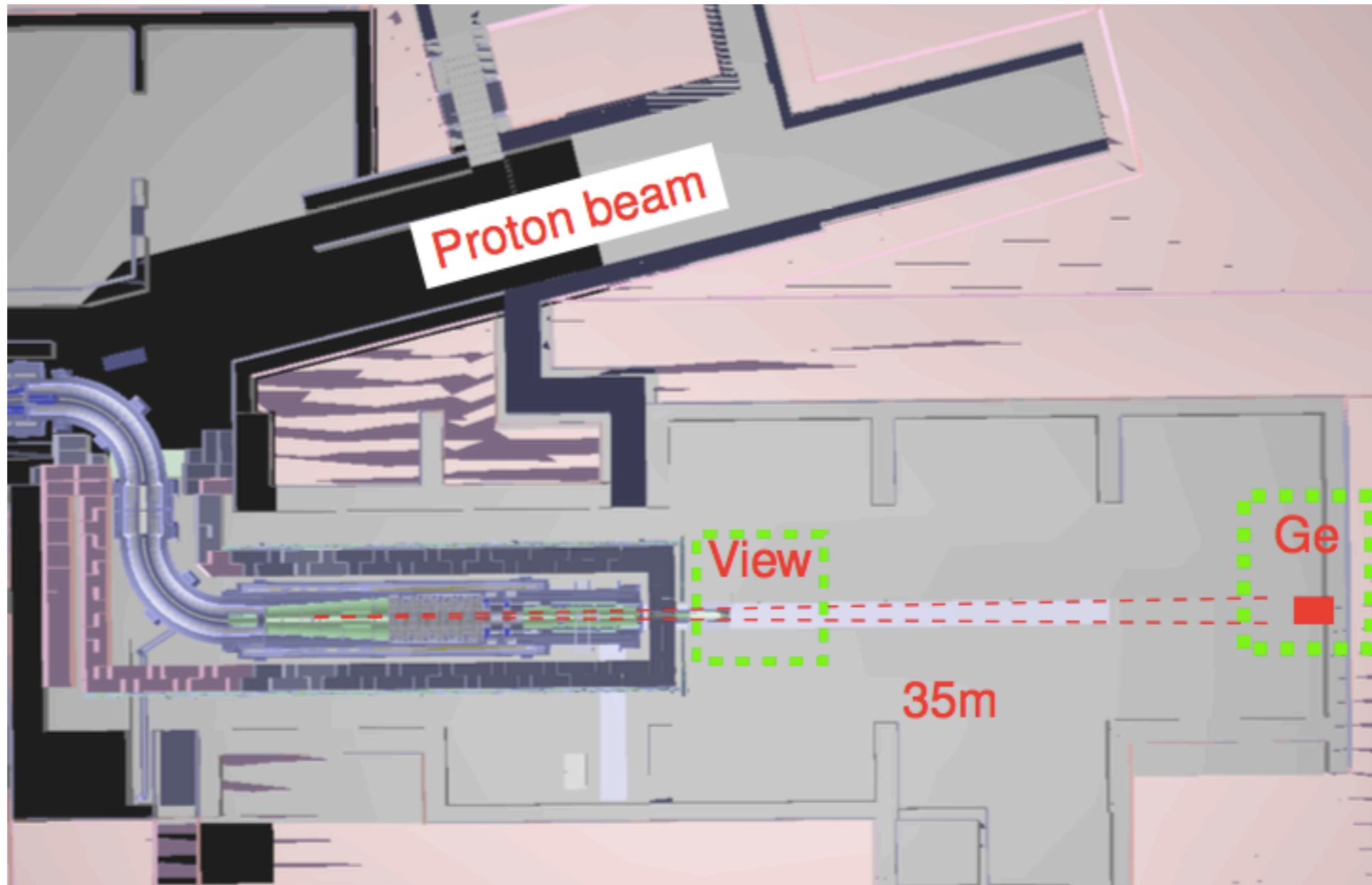


Stopping Target Monitor

Yaqian Wang
for the STM Group

Mu2e-II Workshop
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Mu2e STM Geometry



Experiences from Mu2e

- High Background: An important factor for the precision
- Average energy at the Ge detector
- Rate at the Ge detector

What we do at Mu2e

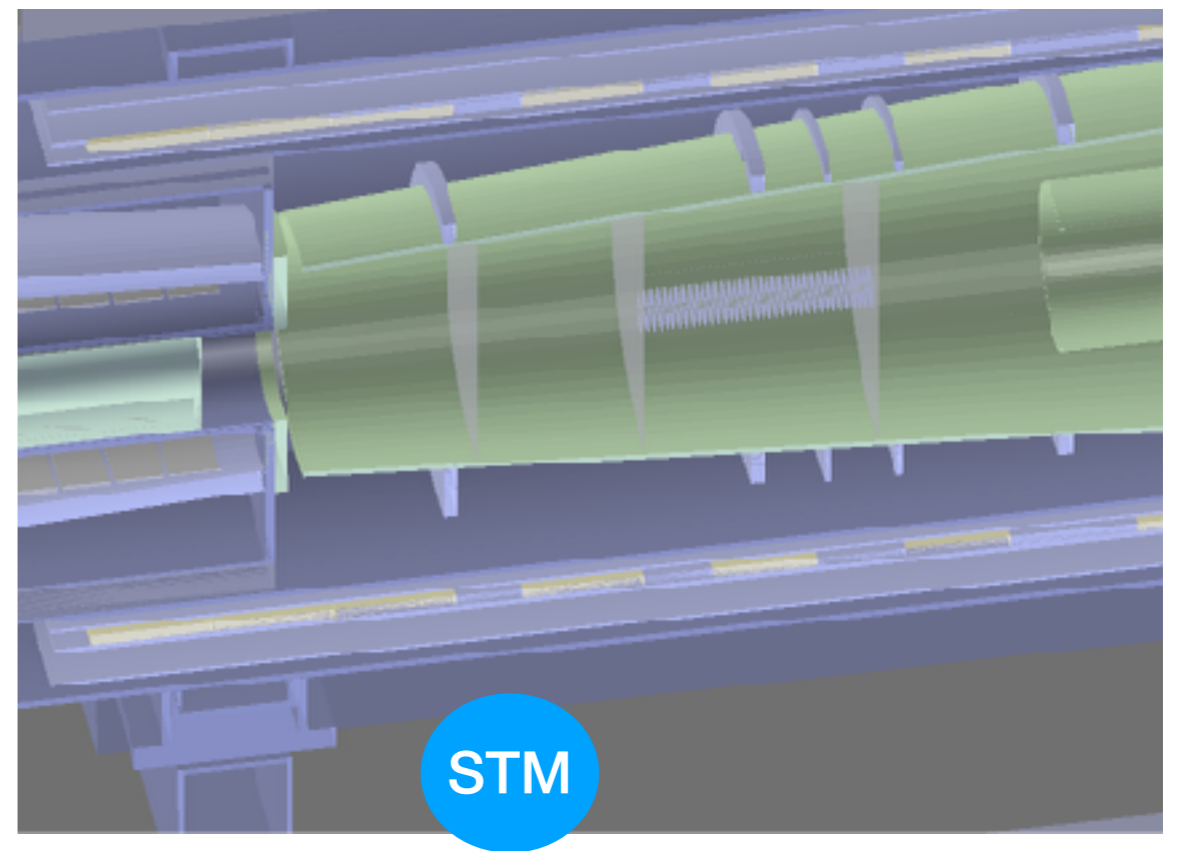
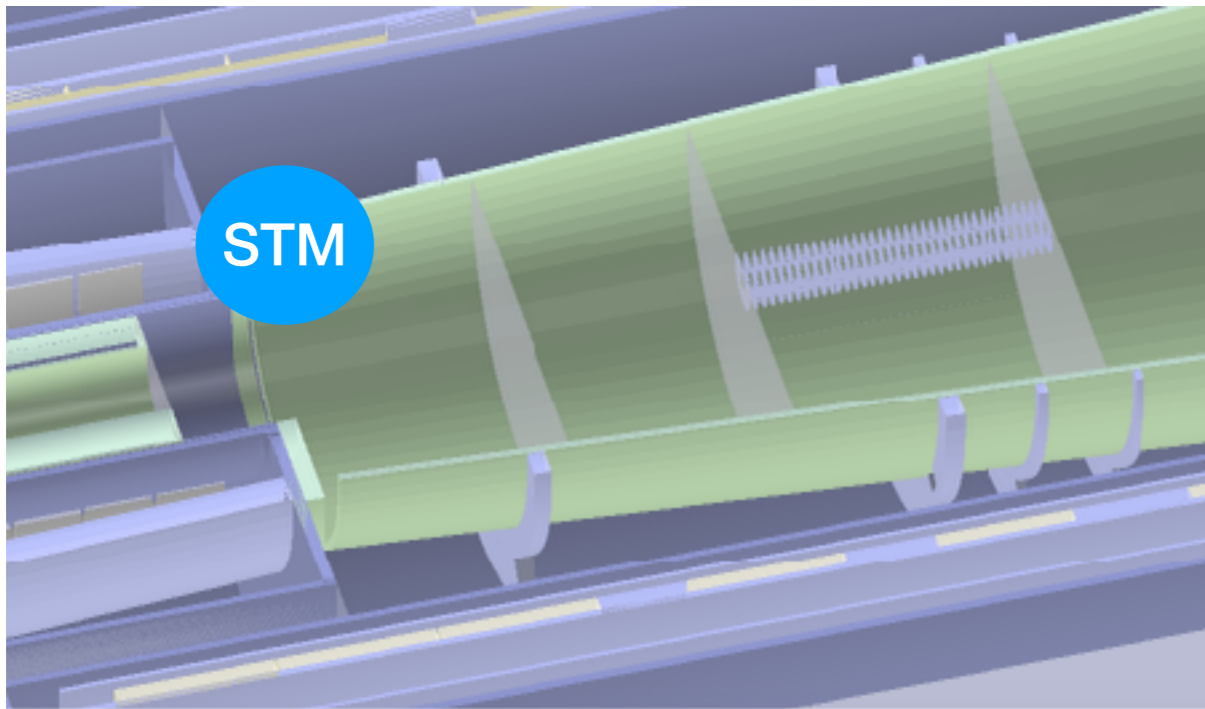
- High Background: thinner upstream windows, limit the view of Ge
- Energy of hits at Ge: (0-75 MeV)
- Rate: insert absorbers

At Mu2e-II

- A straight forward idea:
 - Use as much as possible of Mu2e
 - Keep similar precision
 - Insert Absorber until the rate is acceptable

Second idea

- Move the STM upstream of ST:

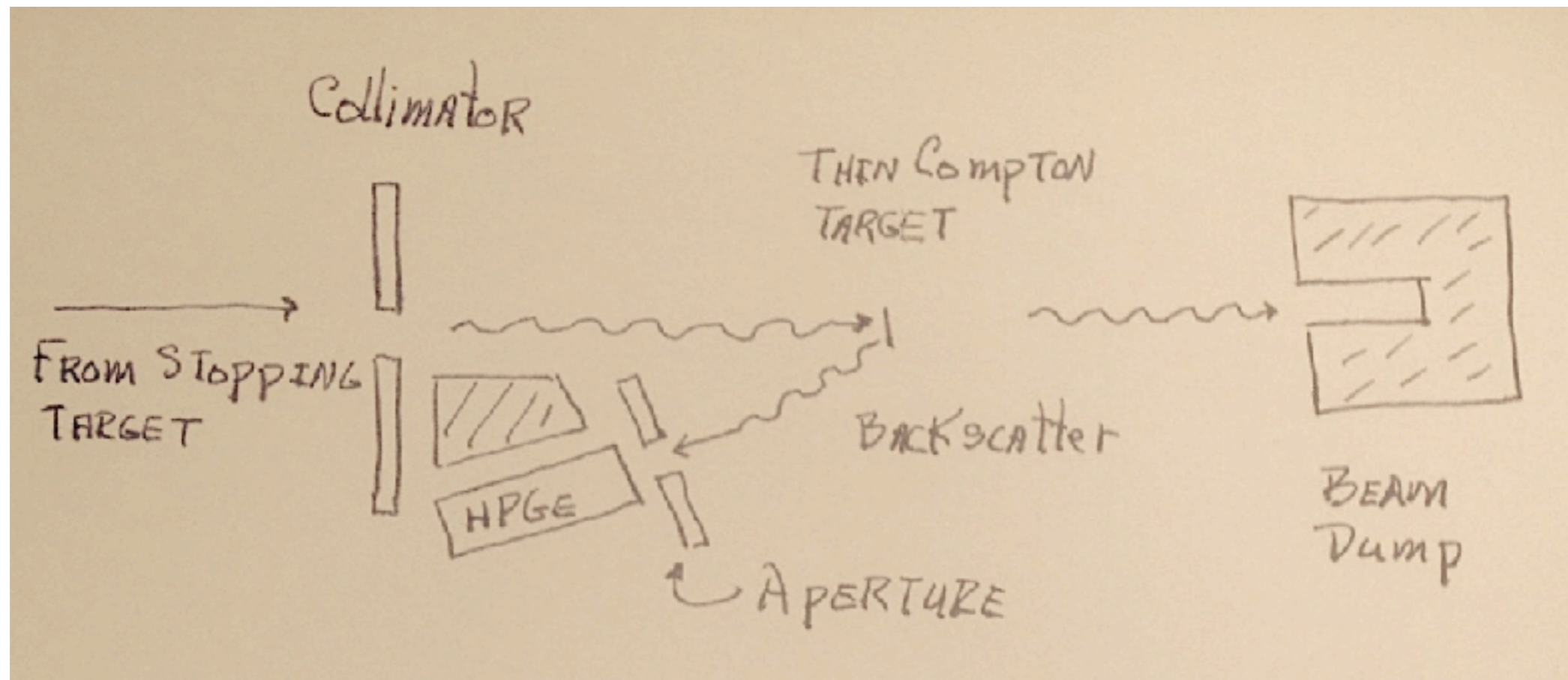


Second idea

- Advantages:
 - Helps to remove beam related background
 - Increase signal to noise
- Disadvantages:
 - Acceptance and calibration

Third idea

- Indirect measurement through Compton scattering



$$\lambda' - \lambda = \frac{h}{m_0 c} (1 - \cos\theta)$$

Third idea

- Advantages:
 - Reduce the average energy
 - Cross section drops as of gamma energy
 - Flexible by change the target view angle
 - Rate is under control through the target
- Disadvantage:
 - Shielding to make sure no side effects for the upstream

Summary

- Keep the geometry and insert more absorber
- Change the position
- Using indirect measurement

Thank you!