



Chicane Status



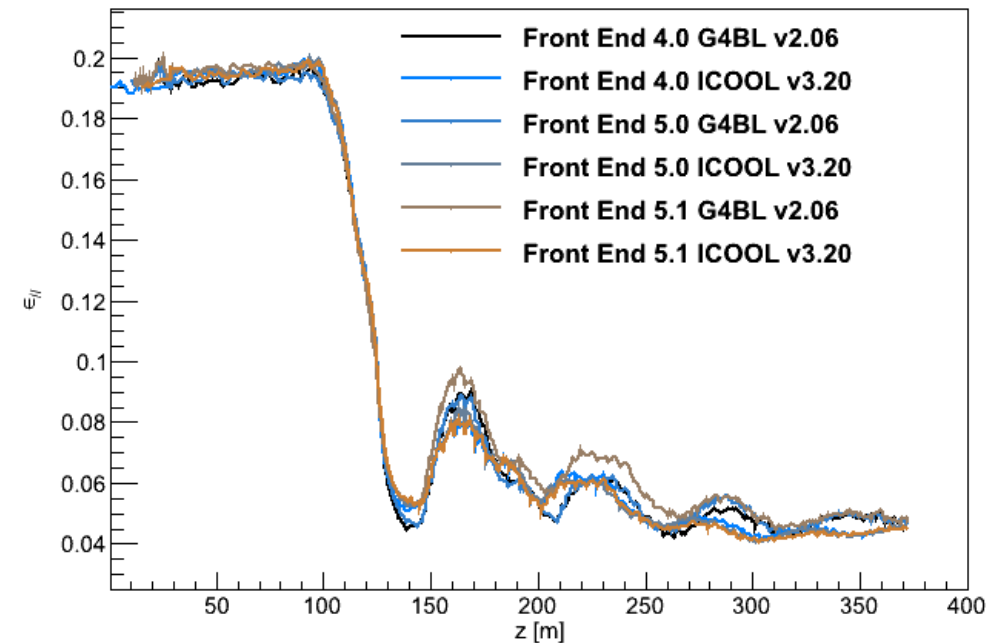
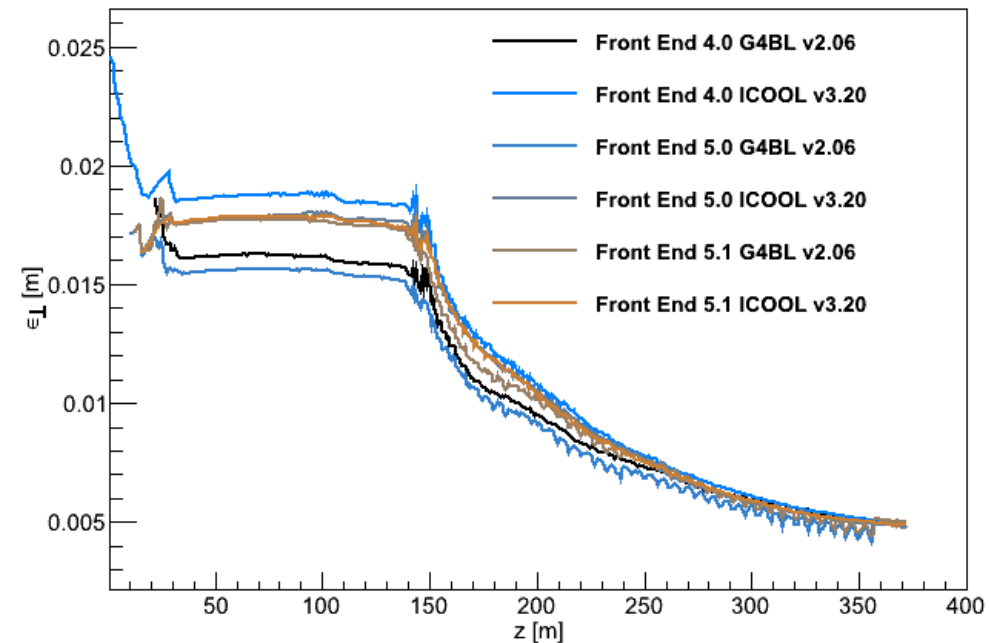
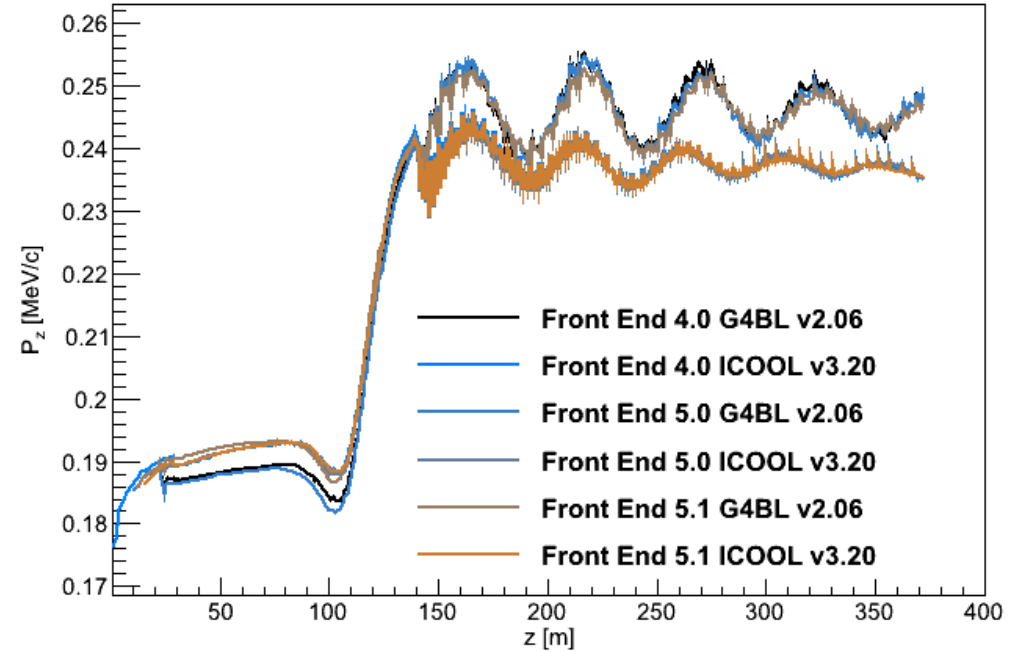
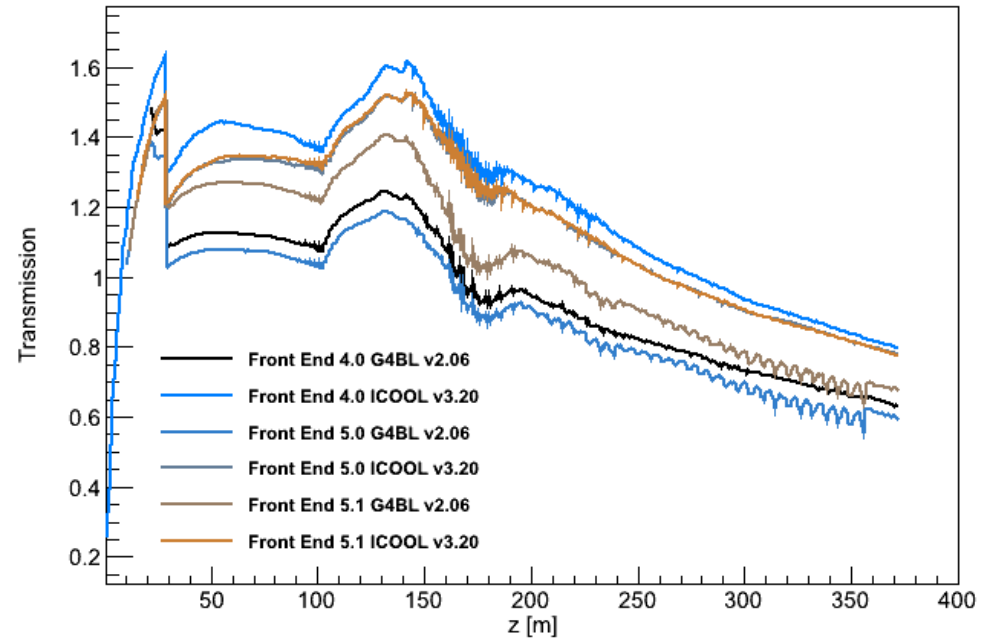
Chris Rogers,
ASTeC,
Rutherford Appleton Laboratory
10 September 2013



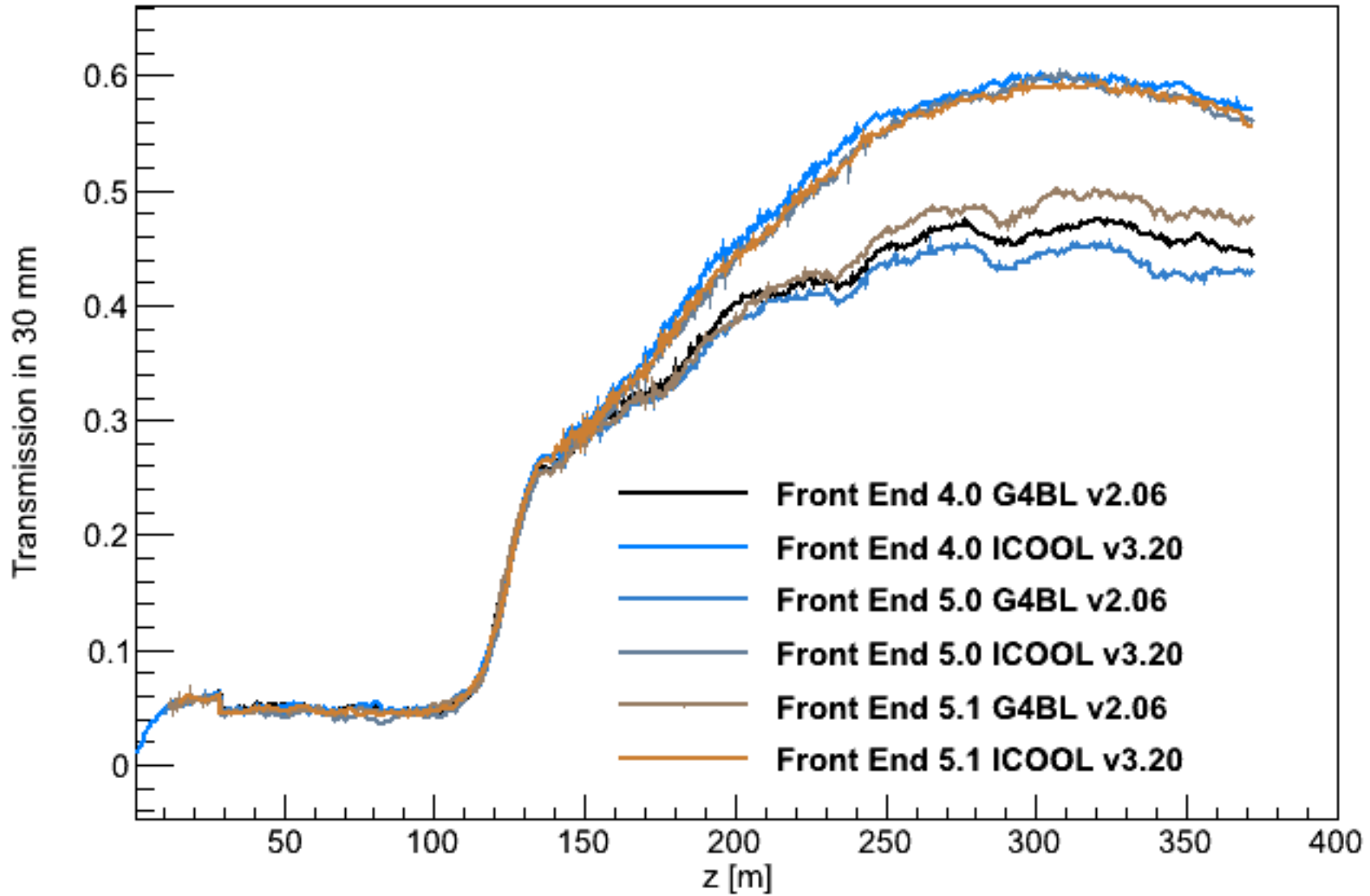
Front End 5.1

- Available from
 - <https://launchpad.net/muon-front-end>
- Note that old UK-NF website will soon disappear
 - File system is no longer supported
 - Admin (Stephen Brooks) is moving to Brookhaven

Capture Performance (400k pot)



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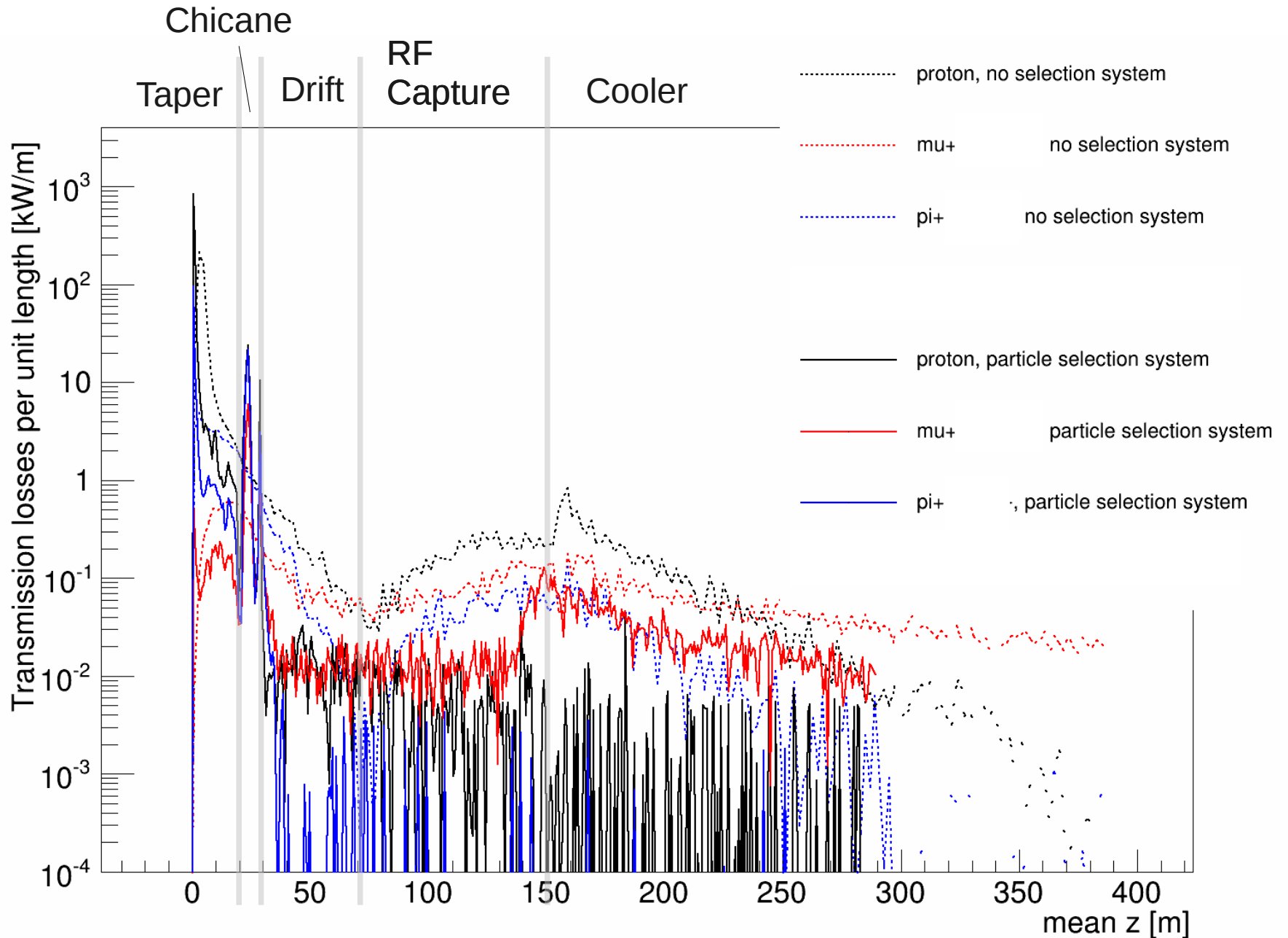
Comment on G4BL Rate

- Tried to fix low good muon yield in G4BL
 - Try adding arbitrary phase offset to cavities (different phasing routine)
 - Try fiddling with LiH thickness (different LiH density)
- No luck so far
- Some effect from fringe field of chicane?
 - Studies ongoing

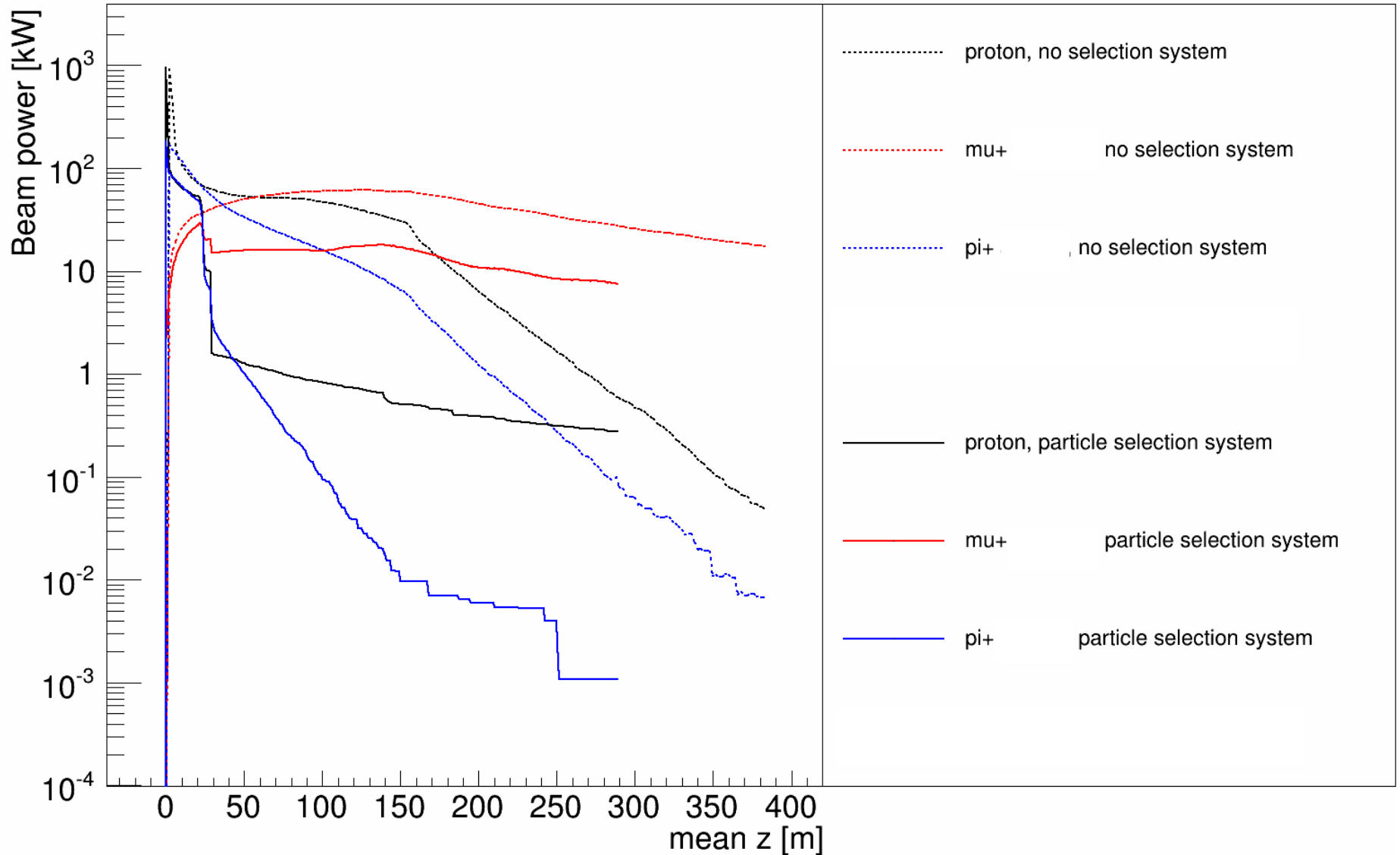
G4BL Study of (Uncontrolled) Losses

- Use G4BL lattice to study beam loss in chicane system and downstream
 - Complementary to MARS simulation
 - Examine beam power lost for different particle species
 - Examine energy spectrum – propose enhanced particle selection scheme

Beam Power Deposited

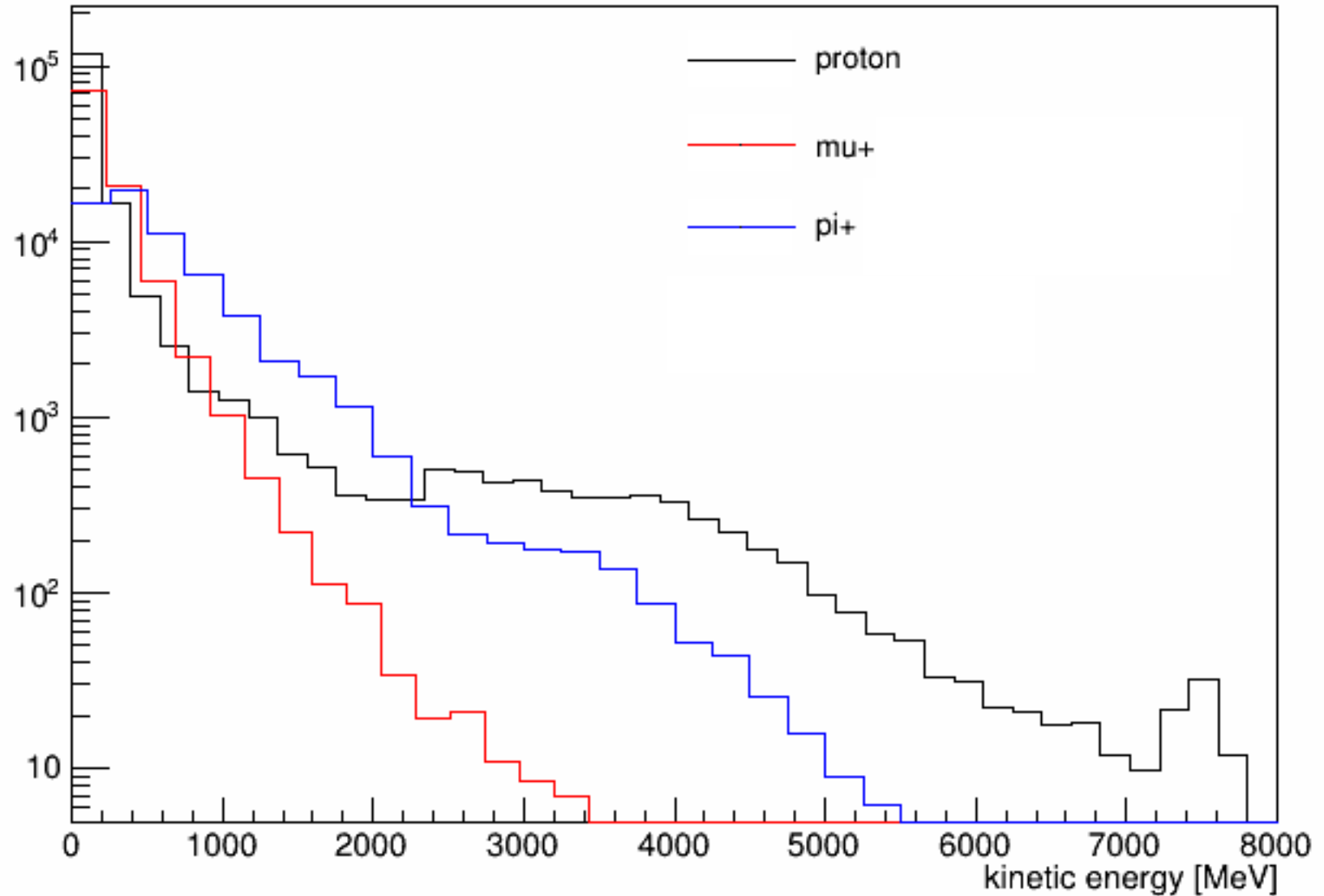


Remaining Beam Power



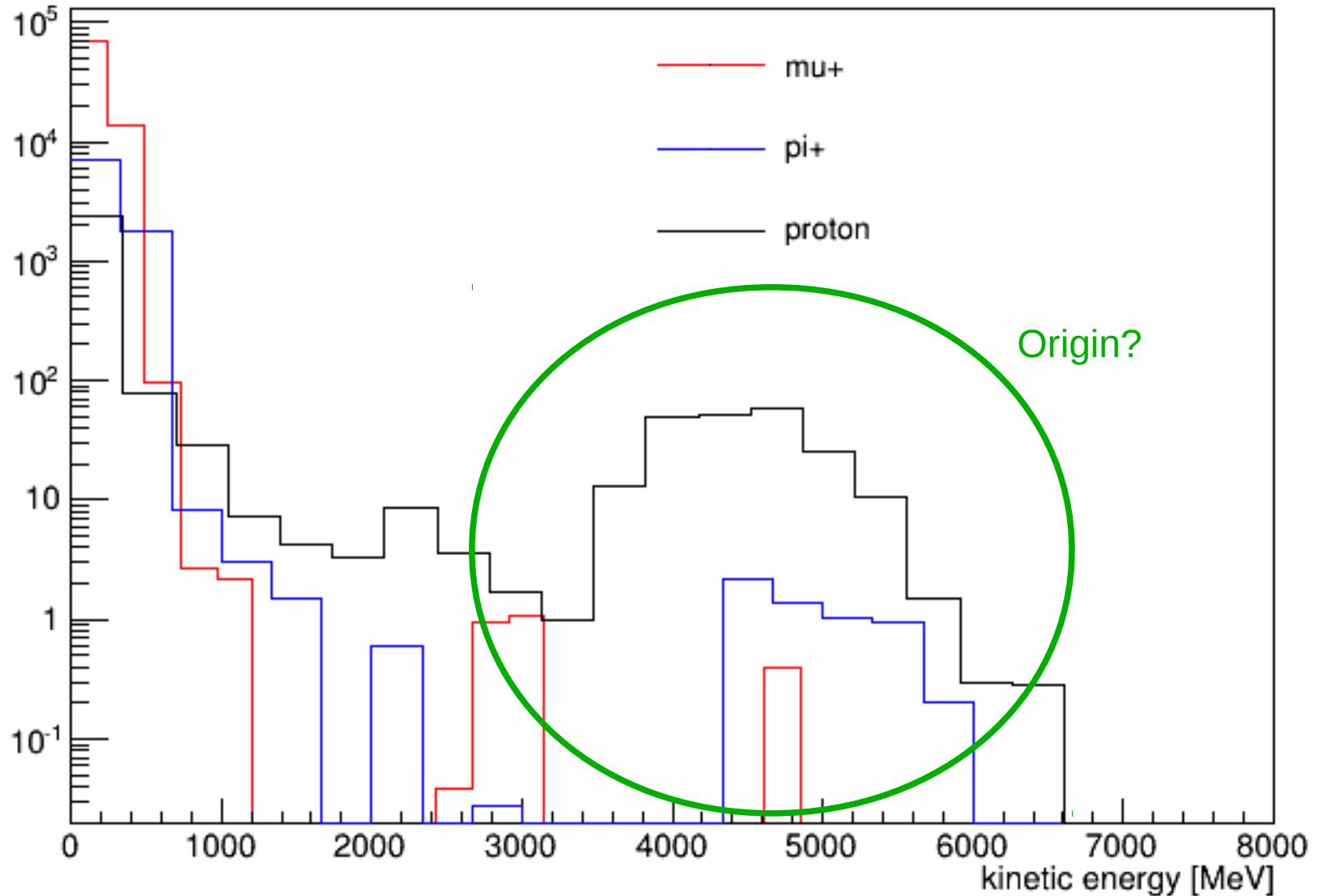
Beam Energy Before Chicane

19500.0 [mm]



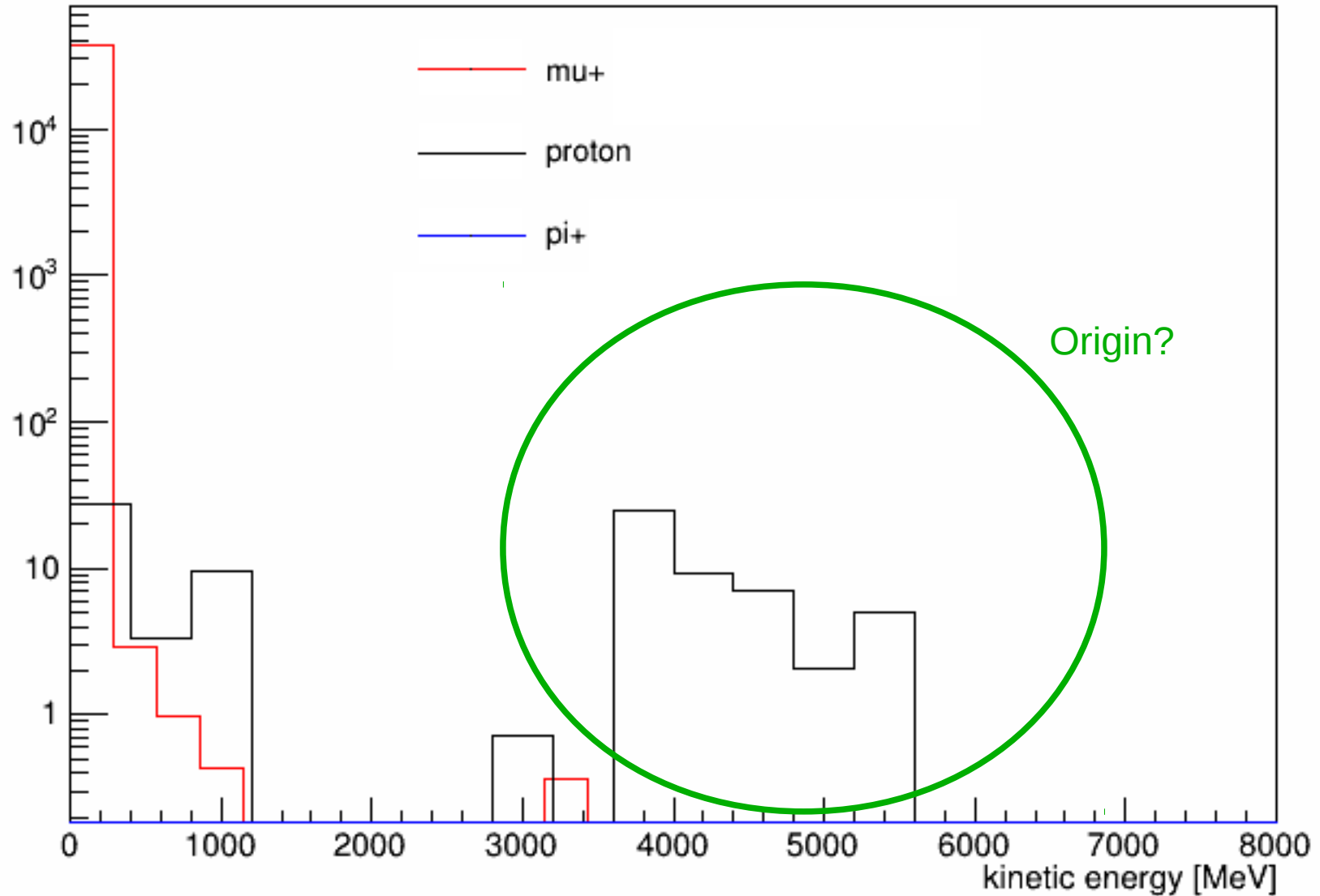
Beam Energy After Chicane and absorber

30750.0 [mm]



Beam Energy After Cooler

289500.0 [mm]



Open Issues

- Can we recover lost performance in G4BL?
 - Running out of excuses
- Uncontrolled losses are a little uncomfortable
 - How do the high energy particles get through the chicane?