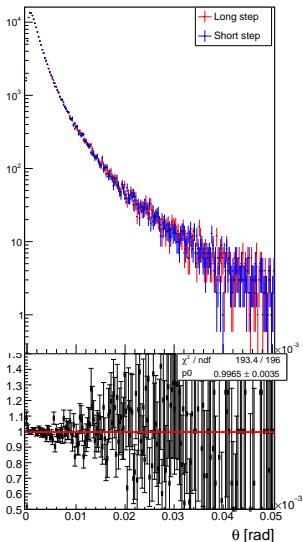
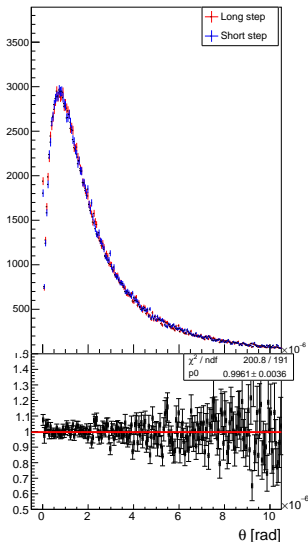


Straw Gas

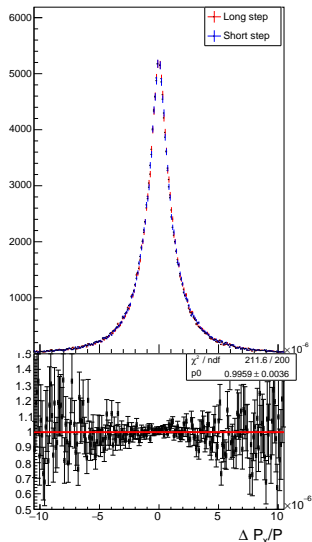
Theta Diff



Theta Diff zoom



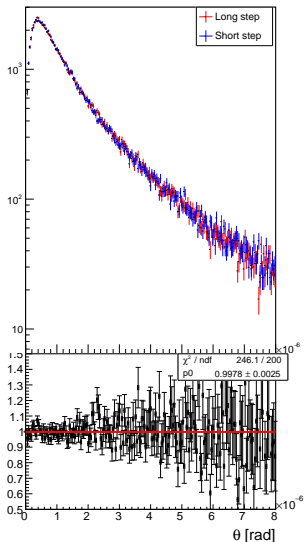
Direction X Diff zoom



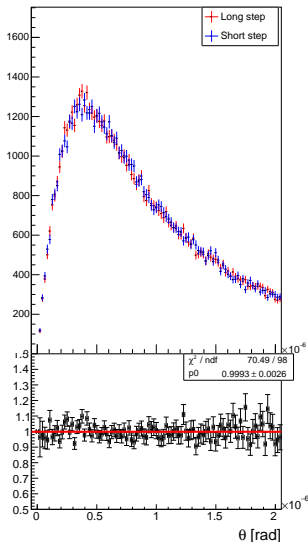
Same MSC effect for one long step and multiple short steps.

Gold

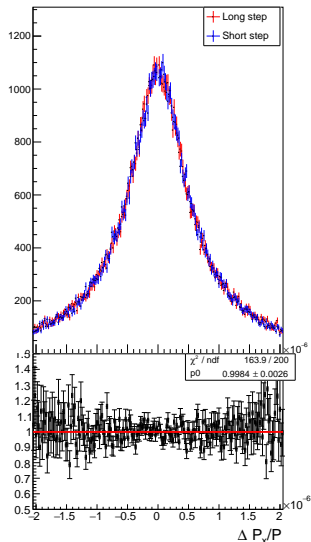
Theta Diff



Theta Diff zoom



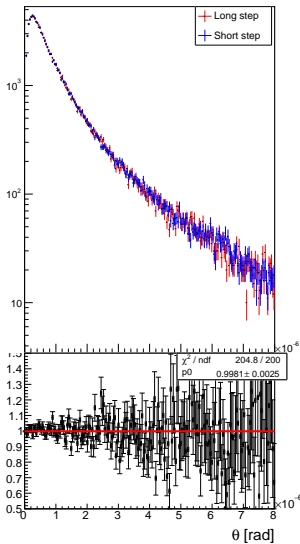
Direction X Diff zoom



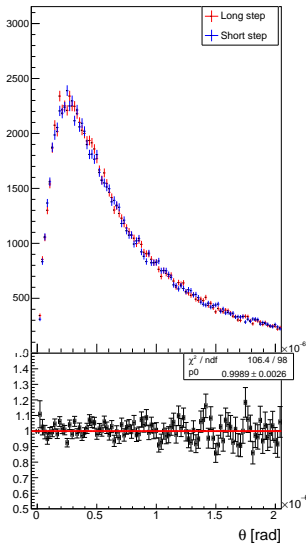
Same MSC effect for one long step and multiple short steps.

Copper

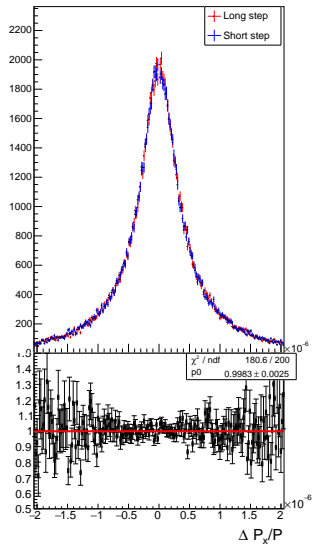
Theta Diff



Theta Diff zoom



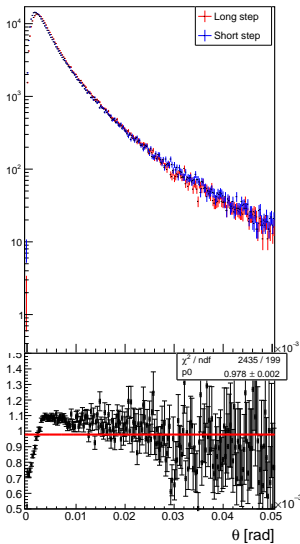
Direction X Diff zoom



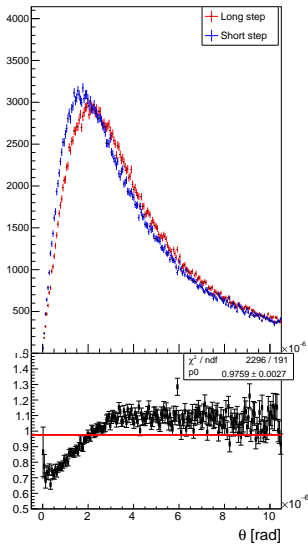
Same MSC effect for one long step and multiple short steps.

Mylar (short step limit $6\mu\text{m}$)

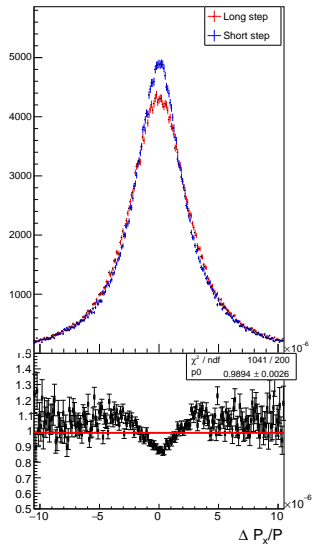
Theta Diff



Theta Diff zoom

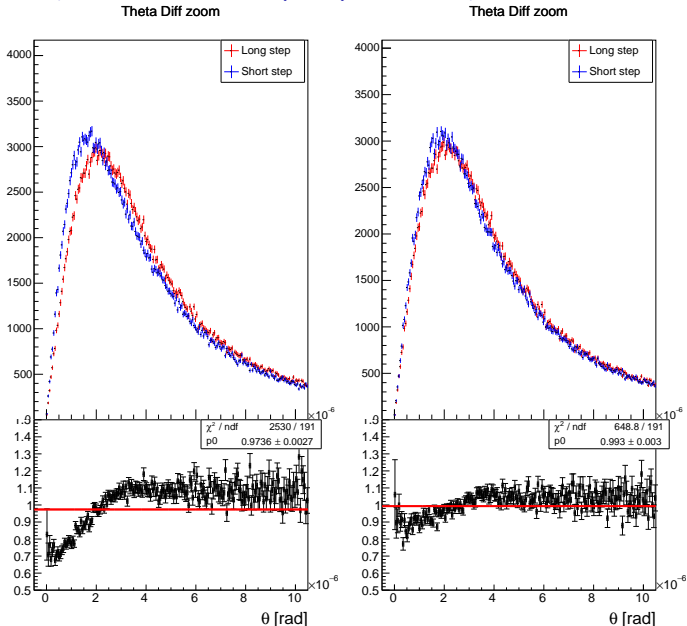


Direction X Diff zoom



Multiple short steps result in smaller MSC effect than one long step in straw wall. 11 / 19

Mylar - $0.5\mu\text{m}$ step limit (left) and $18\mu\text{m}$ step limit (right)

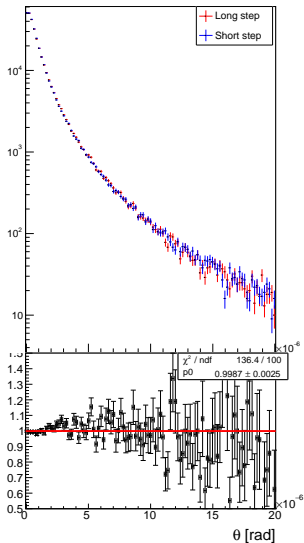


Bigger difference for shorter step.

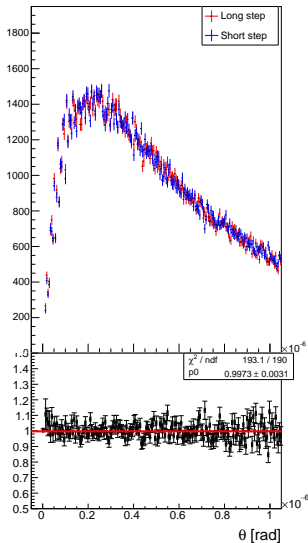
Mylar - test thinner wall

- ▶ thickness of Mylar wall changed from $36\mu\text{m}$ to $3\mu\text{m}$, step limit $0.5\mu\text{m}$

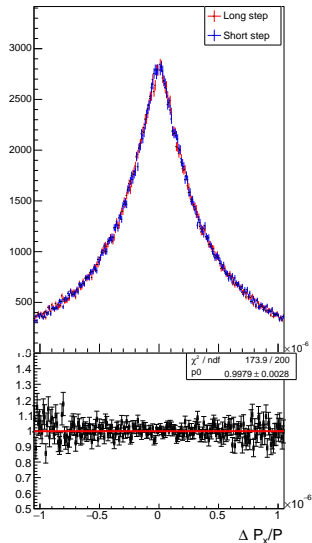
Theta Diff



Theta Diff zoom



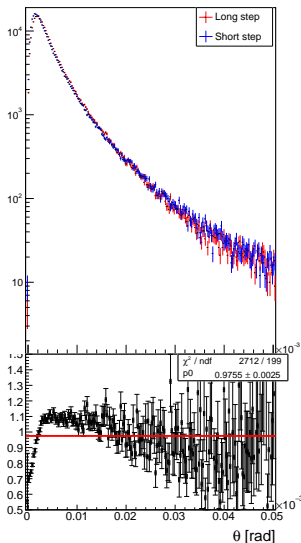
Direction X Diff zoom



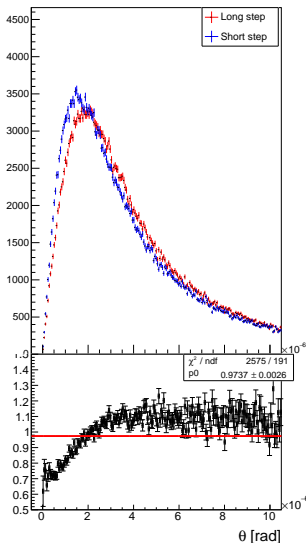
Reasonable agreement for thinner Mylar wall.

Plexiglass instead of Mylar

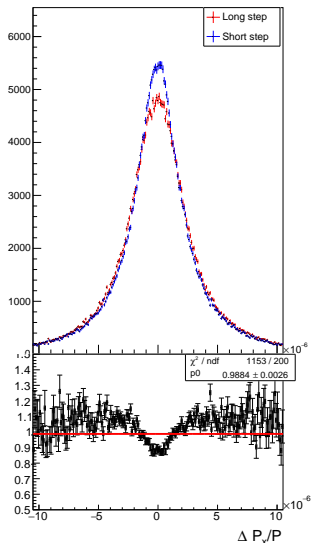
Theta Diff



Theta Diff zoom



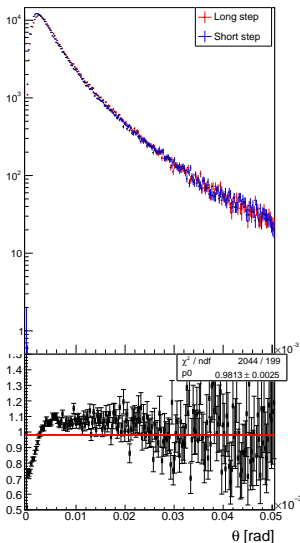
Direction X Diff zoom



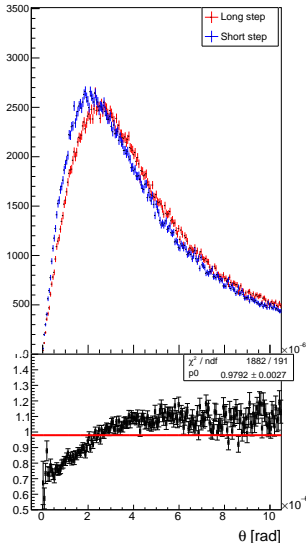
Similar discrepancy for Plexiglass \rightarrow not an issue with Mylar as a material.

C instead of Mylar

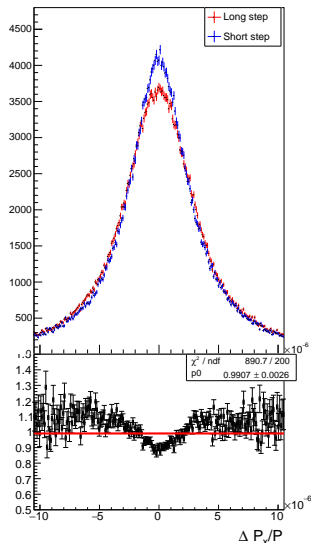
Theta Diff



Theta Diff zoom



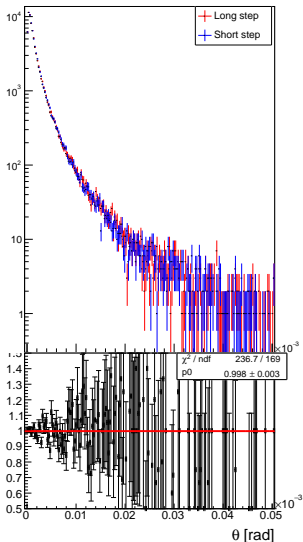
Direction X Diff zoom



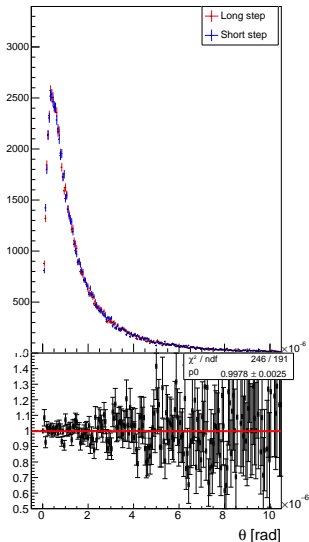
Similar discrepancy for Carbon (simple material) \rightarrow not an issue with NIST compound materials.

Rn gas at 1000 atm instead of Mylar

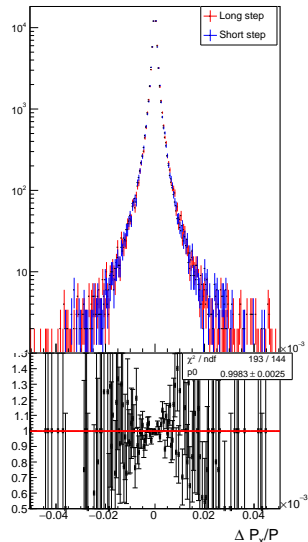
Theta Diff



Theta Diff zoom



Direction X Diff



Testing gas instead of solid material not easy, MSC effect in standard conditions is too small. Gas with density comparable to Mylar needed. Rn gas at 1000 atm provided similar MSC effect as Mylar. No obvious discrepancy observed for Rn gas.