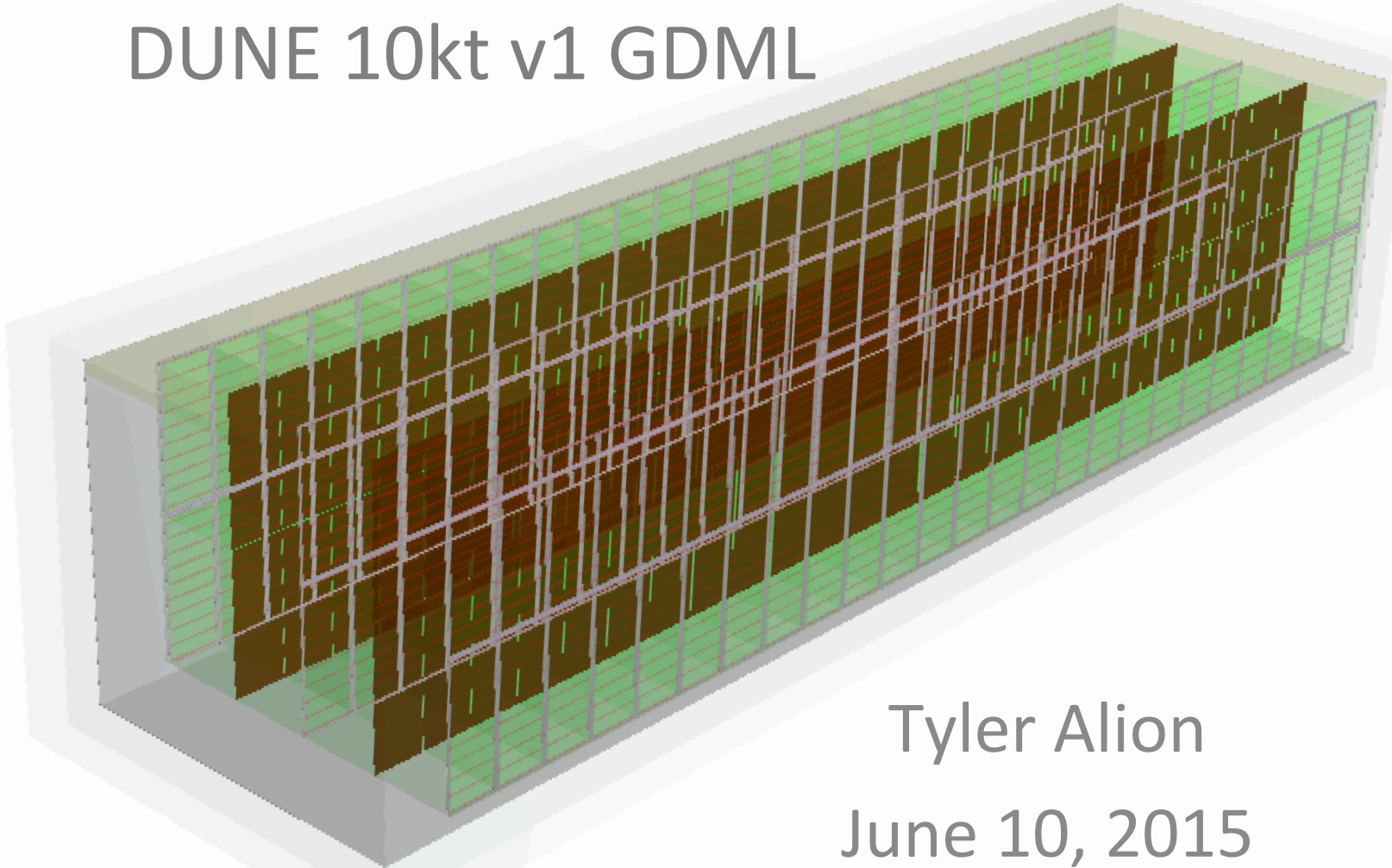


New FD Geometries

DUNE 10kt v1 GDML



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New Geometries

(select in geometry_lbne.fcl or directly in job file)

dune10kt_v1.gdml

dune10kt_v1_workspace.gdml

dune10kt_v1_45deg.gdml

dune10kt_v1_45deg_workspace.gdml

dune10kt_v1_3mmPitch.gdml

dune10kt_v1_3mmPitch_workspace.gdml

Coming soon,
one last bug

New Geometries

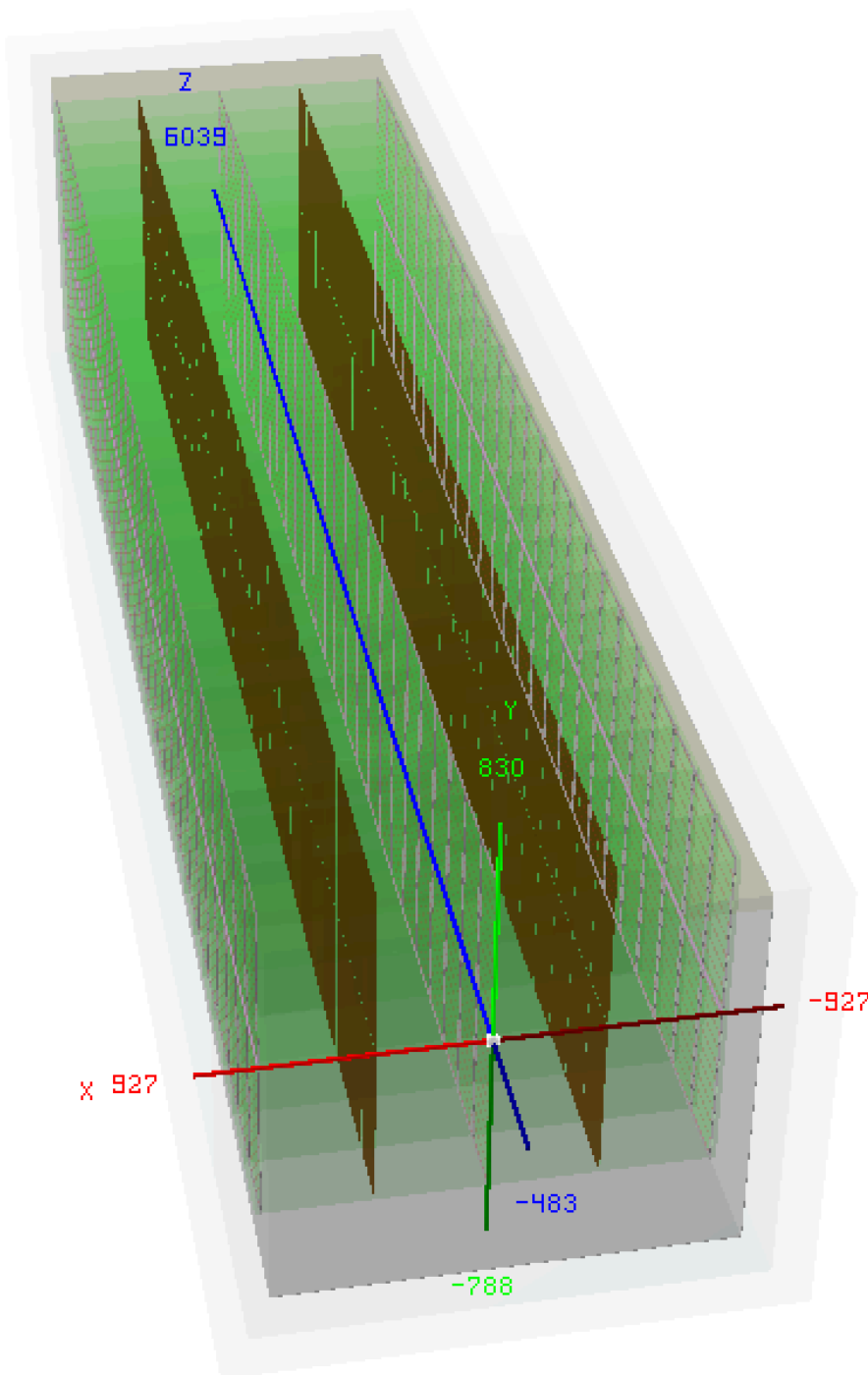
- `dune10kt_v1*`: Reference DUNE FD geometry based off of DocDB 3833-v55
- `dune10kt_v1_45deg*`: Version with ~45 degree wire angles for more thorough study to justify moving to 36 degrees.
- `dune10kt_v1_3mmPitch*`: For considering the benefits of smaller wire pitches.
- `*_workspace*`: 4-APA versions of each for vastly faster simulation times

Origin

X center in the center of the center APA

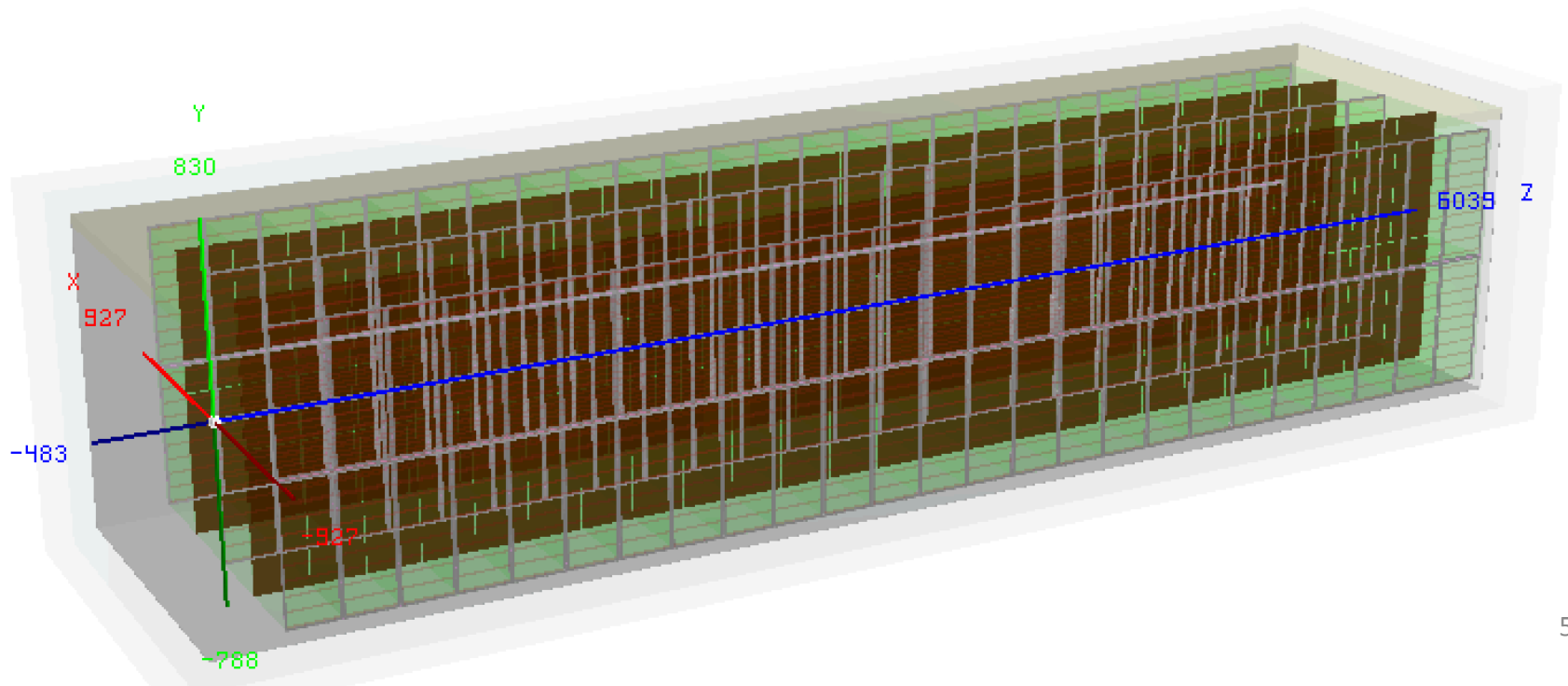
Y center in the center of stacked APAs

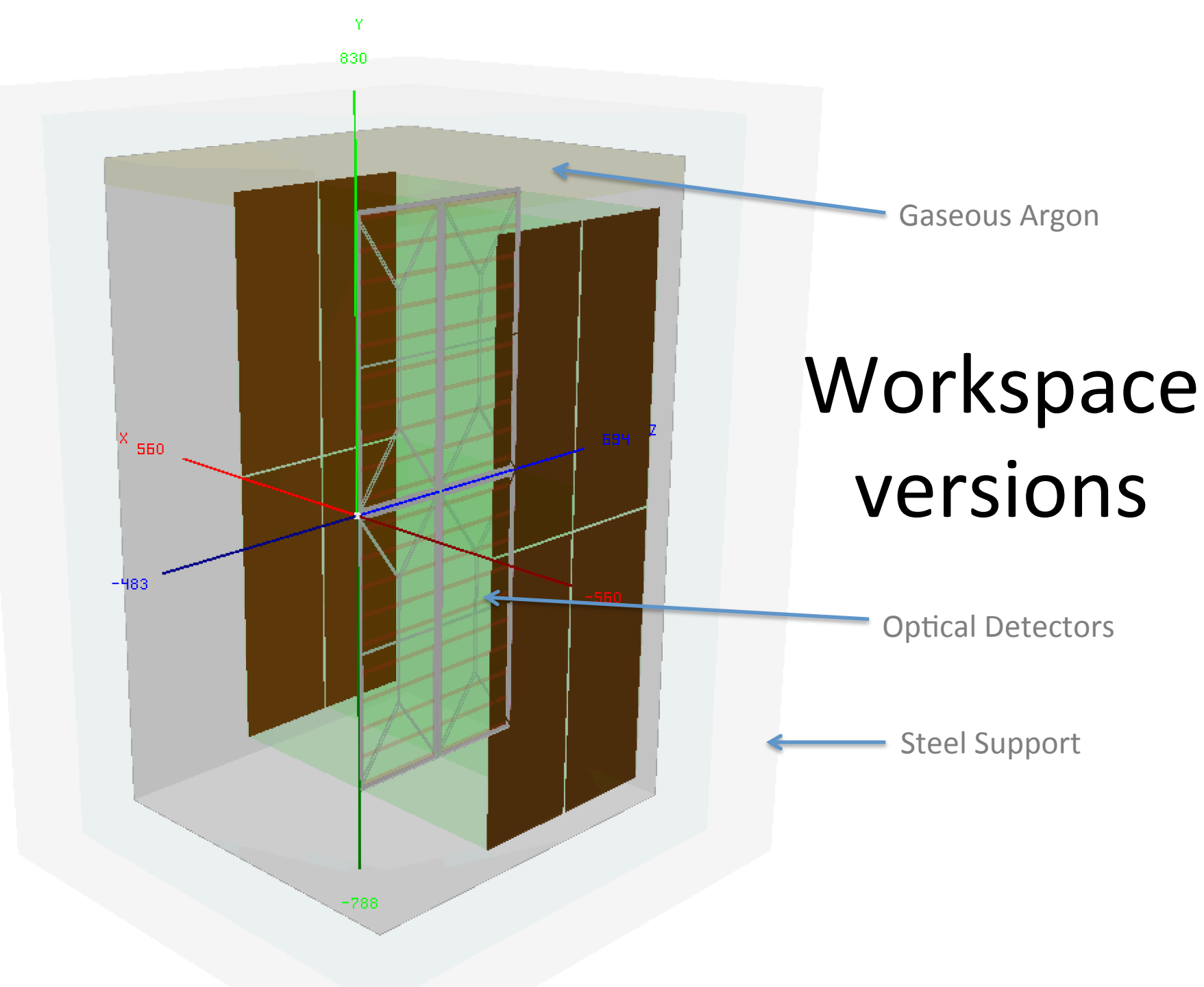
Z center at the very front of active volume



Other Volumes

- Optical detectors
- APA Frames
- Foam padding
- Steel Support (50/50% steel/air)
- At least 100 m of rock in every direction





APA Channel Map Change

ChannelMapAPAAlg.cxx

- Fixed the same bug in 35t Alg
- For the sake of exact channel numbers
- Increases the number of channels found by one per APA
- This could cause problems with old data sets, who is using data in geometry starting with “lbne” (not 35t)
 - lbne10kt.gdml
 - lbne4apa**deg.gdml
- Very easy to fix back

More information

- A good way to dump information about the geometry is to look at the geometry test output:

`lbncode/test/Geometry/test_geometry_lbnefd.fcl`

`lbncode/test/Geometry/test_geometry_lbne35t.fcl`

- Number of channels, tpc locations / dimensions, pitches, wire endpoints, drift distance...
- Really fast and more flexible than remembering for every geometry, just check in the output that the gdml file which is loaded is the one you want.