Updates of φ offset of the barrels for the sPHENIX Geant4 model

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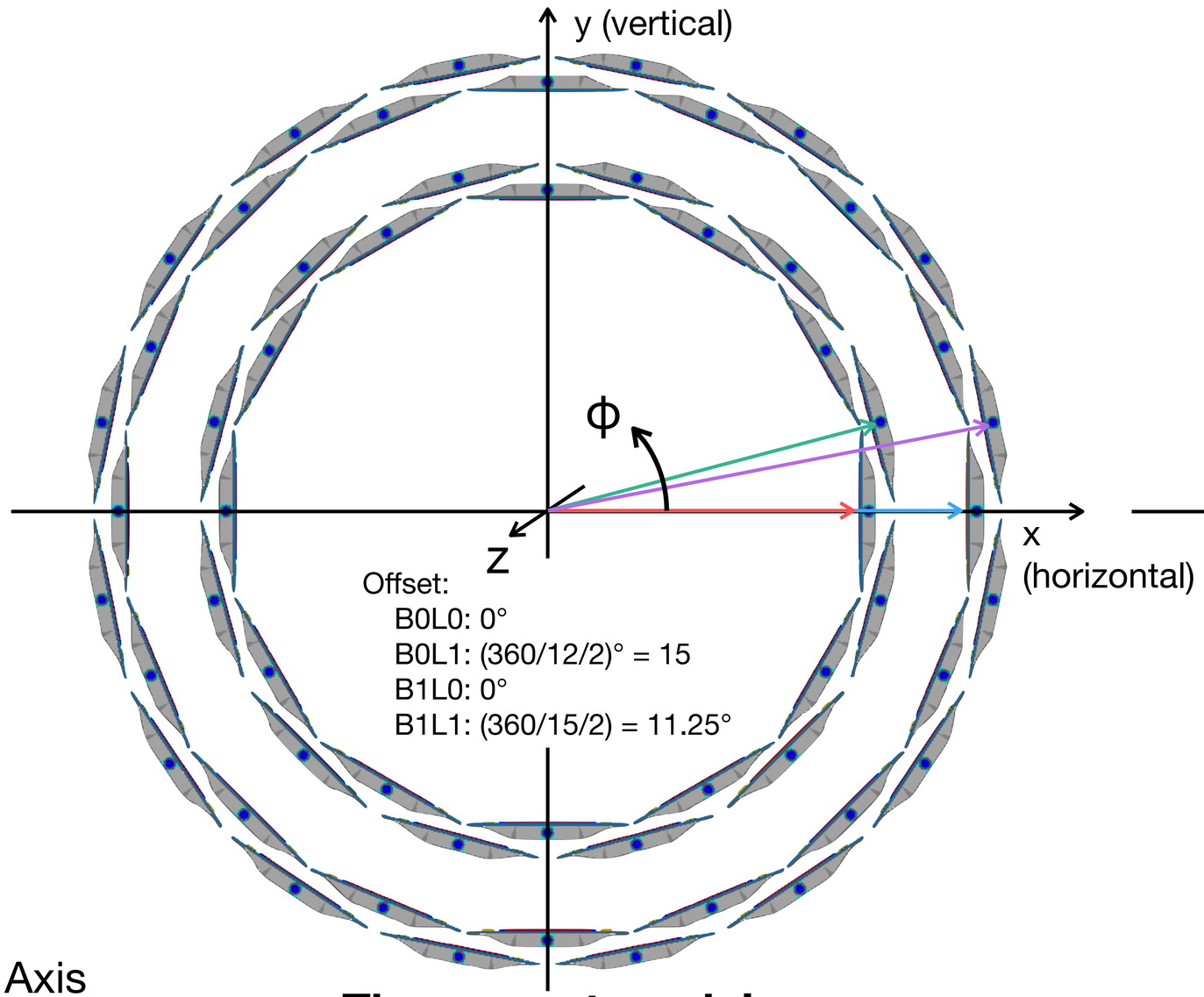
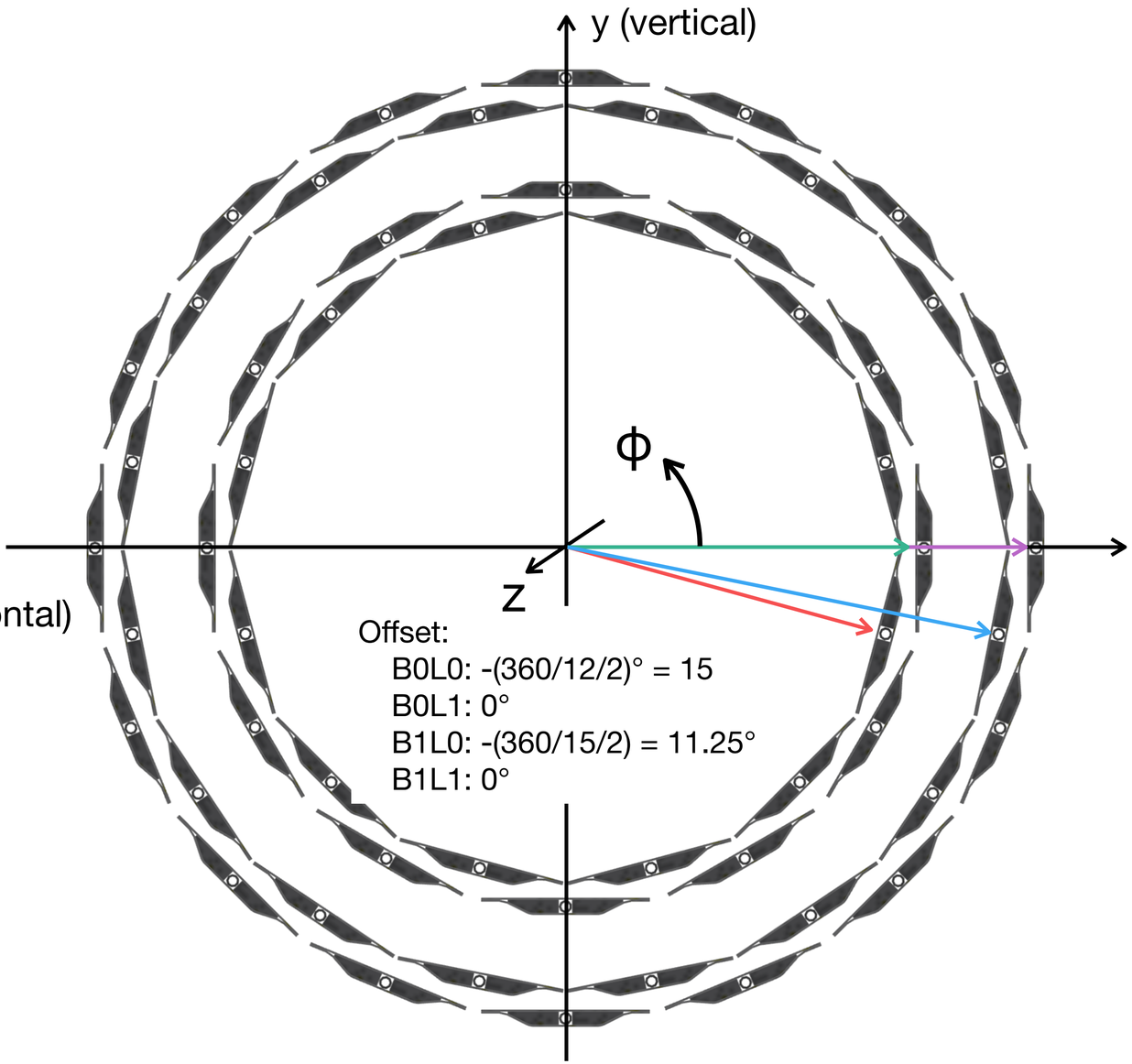
φ offset of the barrels



The current model



The design

(provided by Dan)

Axis

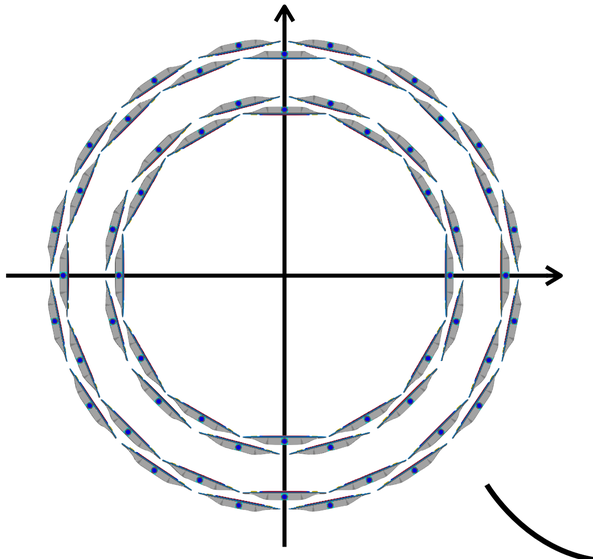
x-axis: $\vec{y} \times \vec{z}$

y-axis: Vertically upward direction

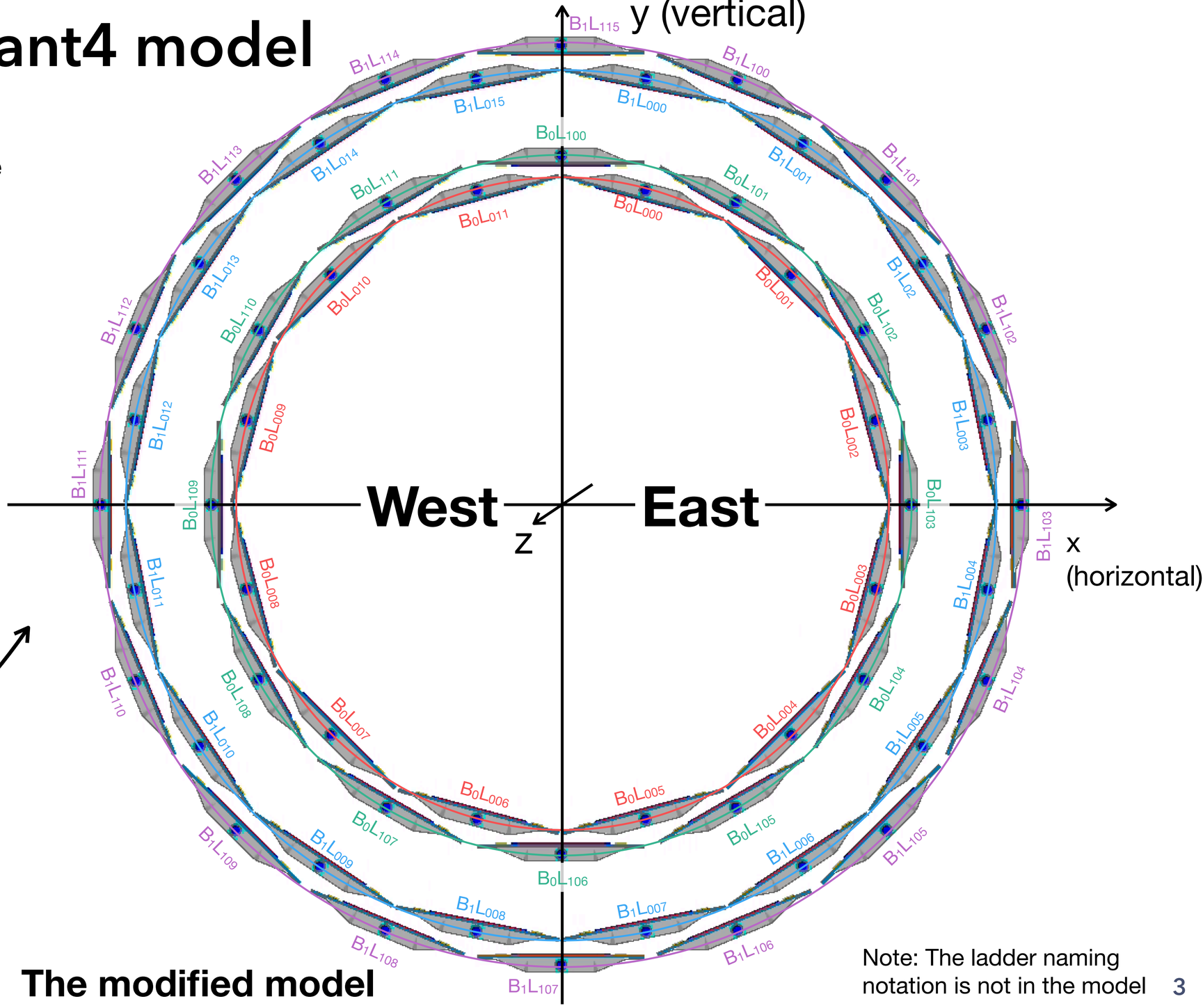
z-axis: The blue beam direction (pointing to the north)

Plan for the INTT Geant4 model

The geometry implementation was basically done. I recently found that the ϕ offset for the barrel needs to be changed. It can be done easily.



Current model

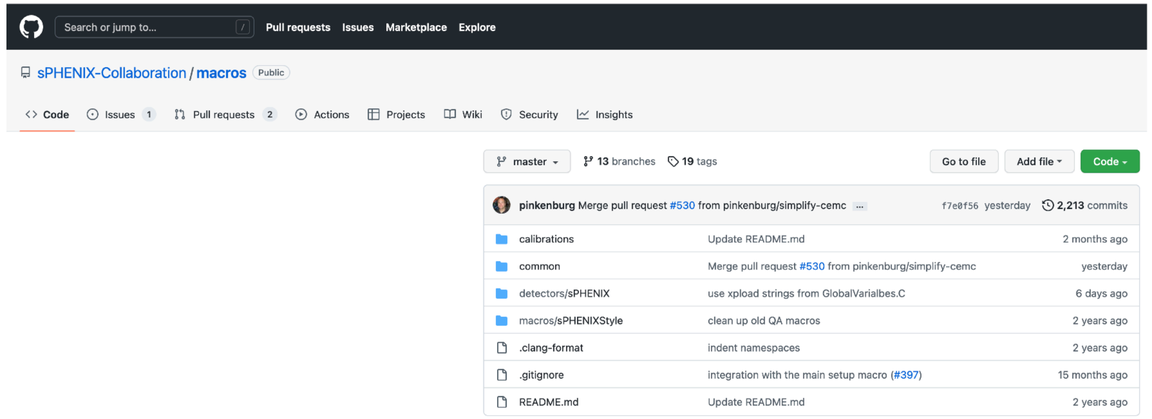


The modified model

Note: The ladder naming notation is not in the model

Code modification

[sPHENIX “macros” repository in GitHub]



File: common/G4_Intt.C

```
[nukazuka 14:52:09 common] $ git diff G4_Intt.C
diff --git a/common/G4_Intt.C b/common/G4_Intt.C
index fd23d17..fd7e32a 100644
--- a/common/G4_Intt.C
+++ b/common/G4_Intt.C
@@ -49,7 +49,7 @@ namespace G4INTT
   int nladder[4] = {12, 12, 16, 16};
   double sensor_radius[4] = {7.188 - 36e-4, 7.732 - 36e-4, 9.680 - 36e-4, 10.262 - 36e-4};

-  double offsetphi[4] = {0.0, 0.5 * 360.0 / nladder[1], 0.0, 0.5 * 360.0 / nladder[3]};
+  double offsetphi[4] = {-0.5 * 360.0 / nladder[0], 0.0, -0.5 * 360.0 / nladder[2], 0.0 };

   enum enu_InttDeadMapType  // Dead map options for INTT
   {
```

← removed line
← added line