

# Old Good Geometries

## HPS-Proposal2014-v6 (three versions with different B-fields)

Official geometry for 2014 mock data challenge.

- SVT rotated 30.52 mrad around target; single sensors for layers 1-3, double sensors with double readout (unganged) for layers 4-6
- ECal flange face at  $z=1318$  mm and photon hole aligned at 30.52 mrad from target
- Front face of ECal crystals is  $z=1393$  mm; ECal aligned so the 30.52 mrad photon beam intersects centerline of ECal at its front face
- All dead material defined using Geant4 primitives: SVT vacuum chamber, ECal flange and vacuum chamber (with honeycomb)
- Uniform magnetic field extending from  $z=-8.28$  to 99.72 cm
- Vacuum (zero density) planes at  $z=15$  cm, same shape as standard SVT layers; hits are saved for charged particles passing through these planes (for use in recoil electron studies)
- Vacuum (zero density) planes at magnetic field boundaries; hits are saved for charged particles passing through these planes

SLIC crashes on approximately 1 in a billion events. This bug is believed to be resolved in v7.

## HPS-Proposal2014-v7 (three versions with different B-fields)

Working geometry for 2014 run studies. Changes will be announced on the hps-software list; you should rerun SLIC on all your data after any change since old data may not work with up-to-date versions of readout sim/analysis/reconstruction.

- SVT rotated 30.52 mrad around target; single sensors for layers 1-3, double sensors with double readout (unganged) for layers 4-6
- ECal flange face at  $z=1318$  mm and photon hole aligned at 30.52 mrad from target
- Front face of ECal crystals is  $z=1393$  mm; ECal aligned so the 30.52 mrad photon beam intersects centerline of ECal at its front face
- All dead material defined using Geant4 primitives: SVT vacuum chamber, ECal flange and vacuum chamber (with honeycomb)
- Uniform magnetic field extending from  $z=-8.28$  to 99.72 cm
- Vacuum (zero density) planes at  $z=15$  cm, same shape as standard SVT layers; hits are saved for charged particles passing through these planes (for use in recoil electron studies)
- Vacuum (zero density) planes at magnetic field boundaries; hits are saved for all particles passing through these planes
- Vacuum (zero density) planes just downstream of the ECal flange; hits are saved for all particles passing through these planes

## HPS-Proposal2014-v8 (three versions with different B-fields)

- Based on HPS-Proposal2014-v7
- Added the ECAL crystal support structure in front of the crystals.
- Added the ECAL cooling plates and pipes.

## HPS-Proposal2014-v9-2pt2

- HPSTracker2014 geometry type with millipede-friendly parameters