

Progress Update

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Build WCSim

- ✓ ROOT display issue  install **XQuartz**
- ✓ Using new sources of ROOT and Geant4:
 - /project/t/tanaka/T2K/HyperK/ROOT/install/root_v5.34.34/bin/thisroot.sh
 - /project/t/tanaka/T2K/HyperK/Geant4/useGeant4.9.6p04.sh
- ✓ Cmake failure  put CMakeList.txt under /WCSim instead of /WCSim/src

Build WCSim

➤ Problems when compile:

1. If I do **make clean**, and then **make rootcint** under /WCSim, it reports:

*/project/t/tanaka/T2K/HyperK/Geant4/src/geant4.9.6.p04/tmp/Linux-g++/WCSim/WCSimConstructCylinder.d:1: *** missing separator. Stop.*

2. If I use cmake, and do **make** under /WCSim_build/mydir, it reports:
(See next page)

[2%] Generating /home/t/tanaka/ezzhang/WCSim-develop/src/WCSimRootDict.cxx, /home/t/tanaka/ezzhang/WCSim-develop/src/WCSimRootDict.h

/project/t/tanaka/T2K/HyperK/ROOT/install/root_v5.34.34/bin/rootcint:
/usr/lib64/libstdc++.so.6: version `GLIBCXX_3.4.15' not found (required by
/project/t/tanaka/T2K/HyperK/ROOT/install/root_v5.34.34/bin/rootcint)

/project/t/tanaka/T2K/HyperK/ROOT/install/root_v5.34.34/bin/rootcint:
/usr/lib64/libstdc++.so.6: version `GLIBCXX_3.4.15' not found (required by
/project/t/tanaka/T2K/HyperK/ROOT/install/root_v5.34.34/lib/libCint.so)

make[2]: *** [/home/t/tanaka/ezzhang/WCSim-develop/src/WCSimRootDict.cxx] Error 1

make[1]: *** [CMakeFiles/WCSimRoot.dir/all] Error 2

make: *** [all] Error 2

Learn Tensorflow

✓ Finished reading the remaining part of Tensorflow tutorial

Some chapters are of great importance:

- Threading and Queues
- Reading data
- Supervisor: Training Helper for Days-Long Trainings.
- Convolutional Neural Networks
- Performance Guide

Read WCSim Documents

<https://github.com/WCSim/WCSim/blob/develop/doc/DetectorDocumentation.pdf>

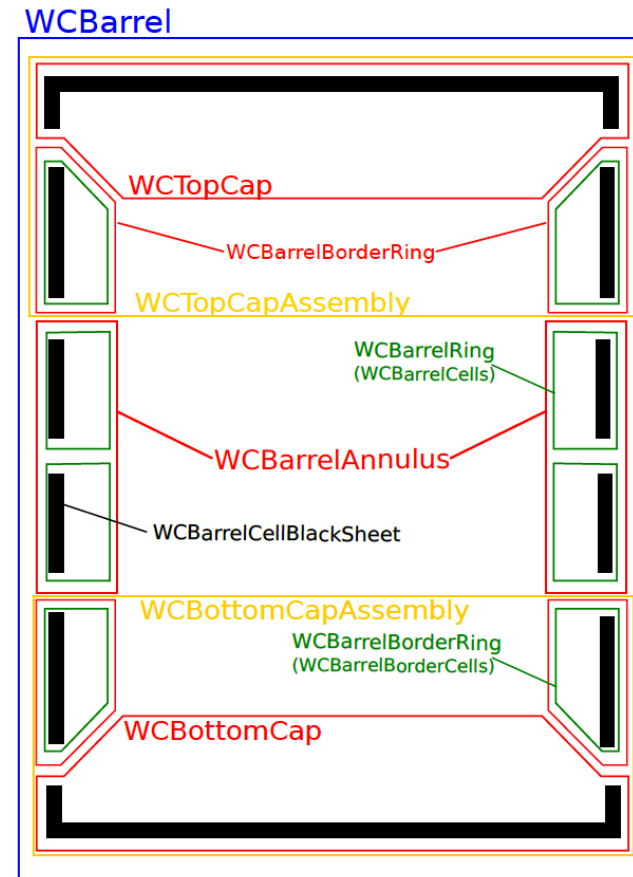
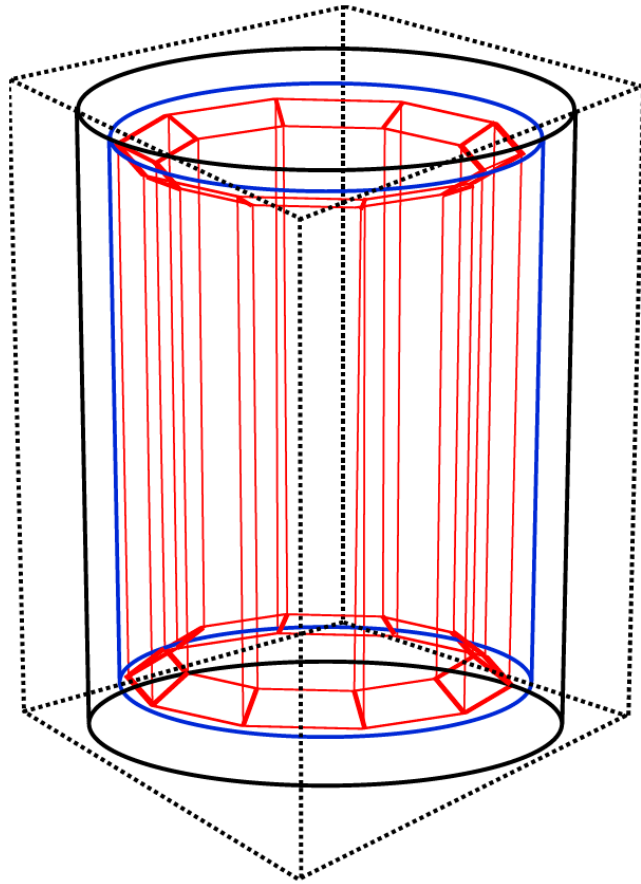
Contents:

- ✓ The WCSim Geometry
- ✓ Set up your own detector

DAQ classes - for dark noise, digitization, and triggering

Output Root File

The WCSim Geometry

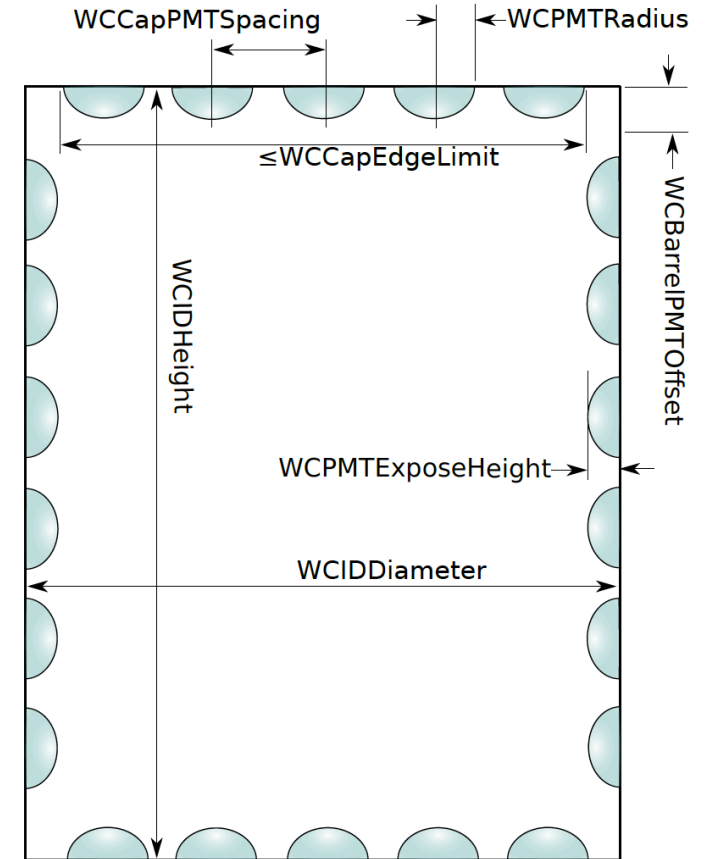


Example of setting up detector

```
void WCSimDetectorConstruction::SetSuperKGeometry()
{
    WCSimPMTObject * PMT = CreatePMTObject("PMT20inch");
    WCPMTName = PMT->GetPMTName();
    WCPMTExposeHeight = PMT->GetExposeHeight();
    WCPMTRadius = PMT->GetRadius();
    WCPMTGlassThickness = PMT->GetPMTGlassThickness();
    WCIDDiameter      = 33.6815*m; //16.900*2*
                                //cos(2*pi*rad/75)*m;

    WCIDHeight        = 36.200*m;
    WCBarelPMTOffset  = 0.0715*m; //offset from vertical
    WCBarelNumPMTHorizontal = 150;
    WCBarelNRings     = 17.;
    WCPMTperCellHorizontal = 4;
    WCPMTperCellVertical  = 3;
    WCCapPMTSpacing      = 0.707*m; // distance between centers
                                // of top and bottom pmts

    WCCapEdgeLimit      = 16.9*m;
    WCBblackSheetThickness = 2.0*cm;
    WCAddGd              = false;
}
```



Next Step

1. Complete building WCSim
2. Go through documents and sample macros of WCSim