


Phase II Geometry

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Goal

Design Phase II System Test detector geometries for use in simulations.

Plan

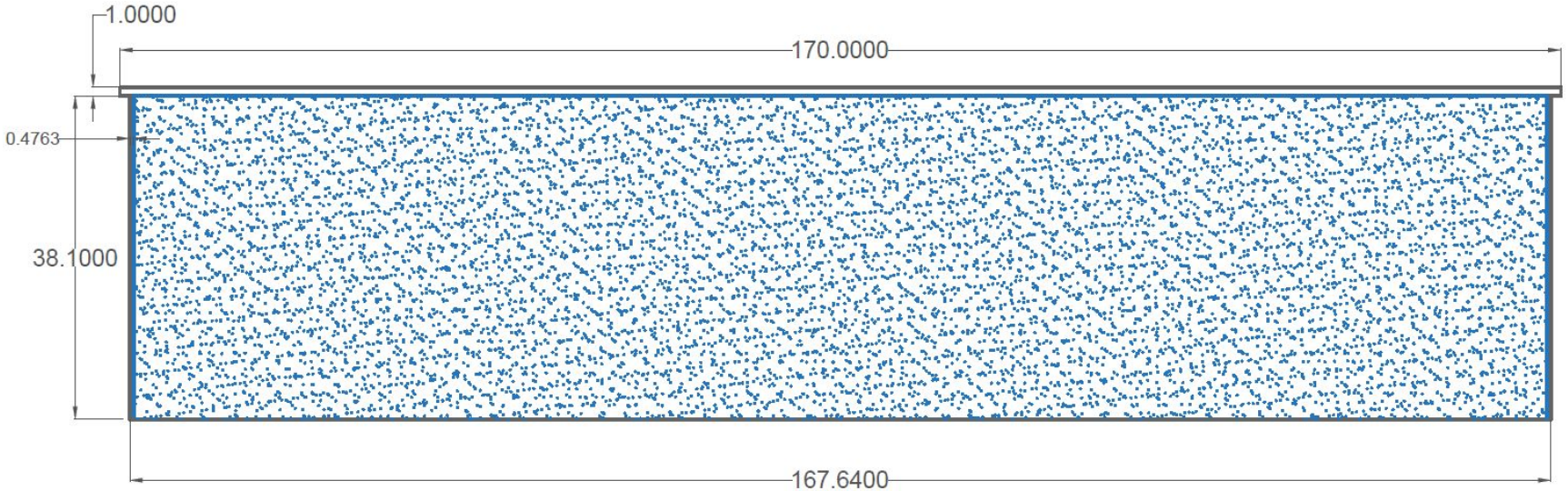
-------Done----------
-------In Progress--

1. Study Phase I and LZ geometries
    a. Find reusable files
2. Design simplified geometry
    a. Test for basic functionality
3. Increase complexity of geometry
    a. Add optical surfaces
    b. Add PMT’s
    c. Other features
4. Work towards final Phase II geometry
    a. More components, most realistic
5. Work on macros for Phase II

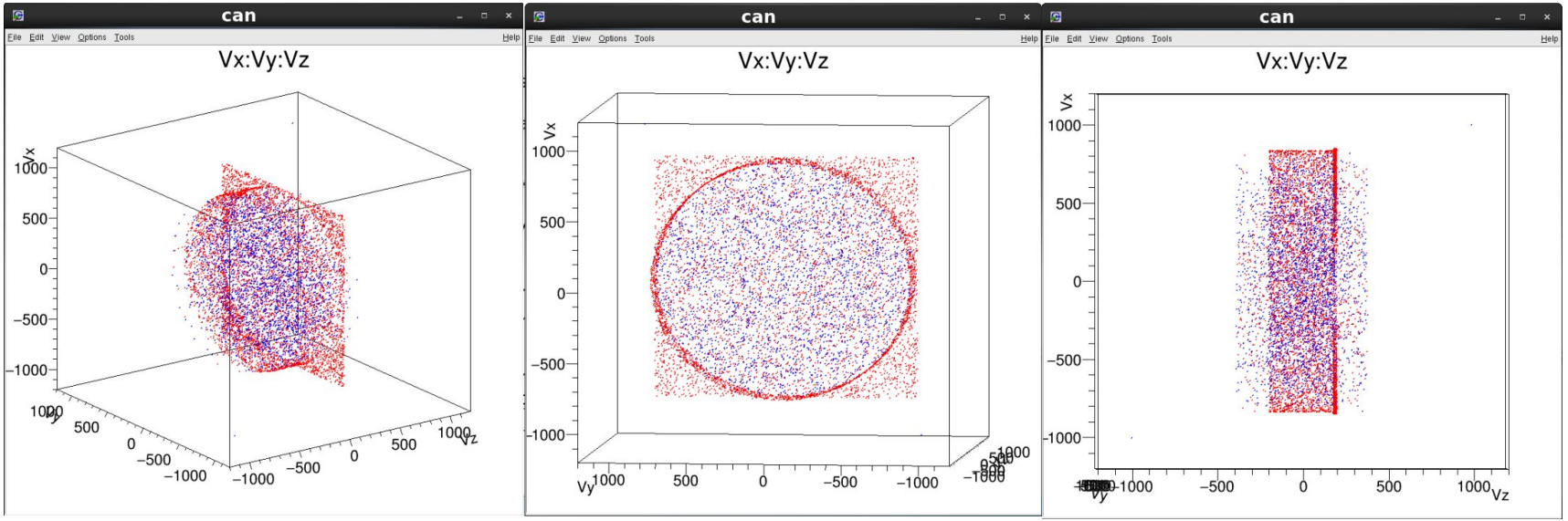
Done Last Week:

- Added a large surrounding vacuum room to the simple detector
- Fixed simplified visualization
- Plotted energy depositions vs radius
- Drawing of PMT array

Simplified Geometry



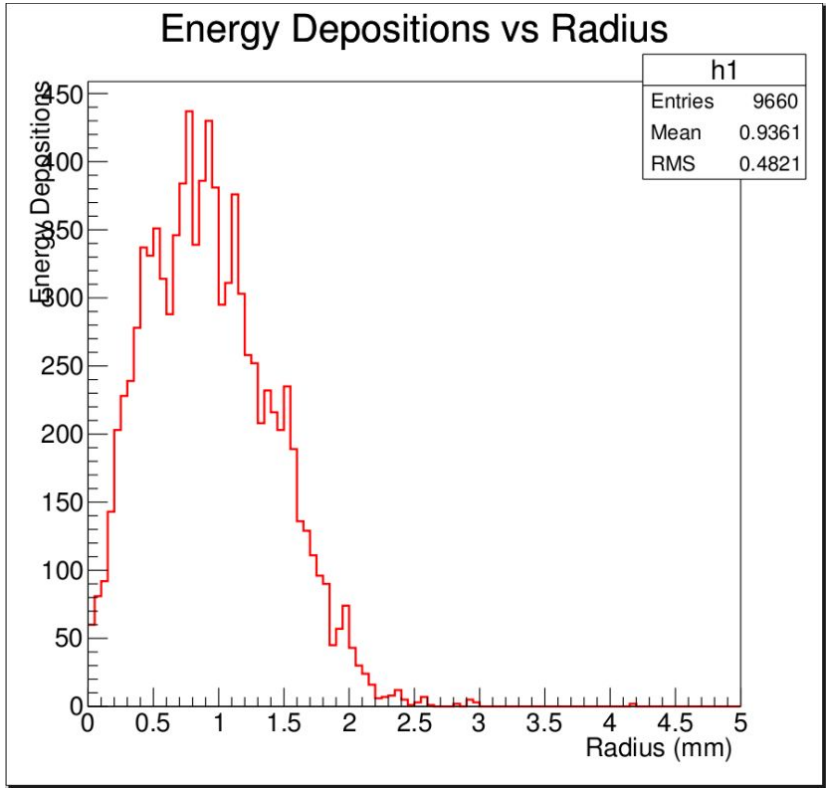
2 Component Visualization



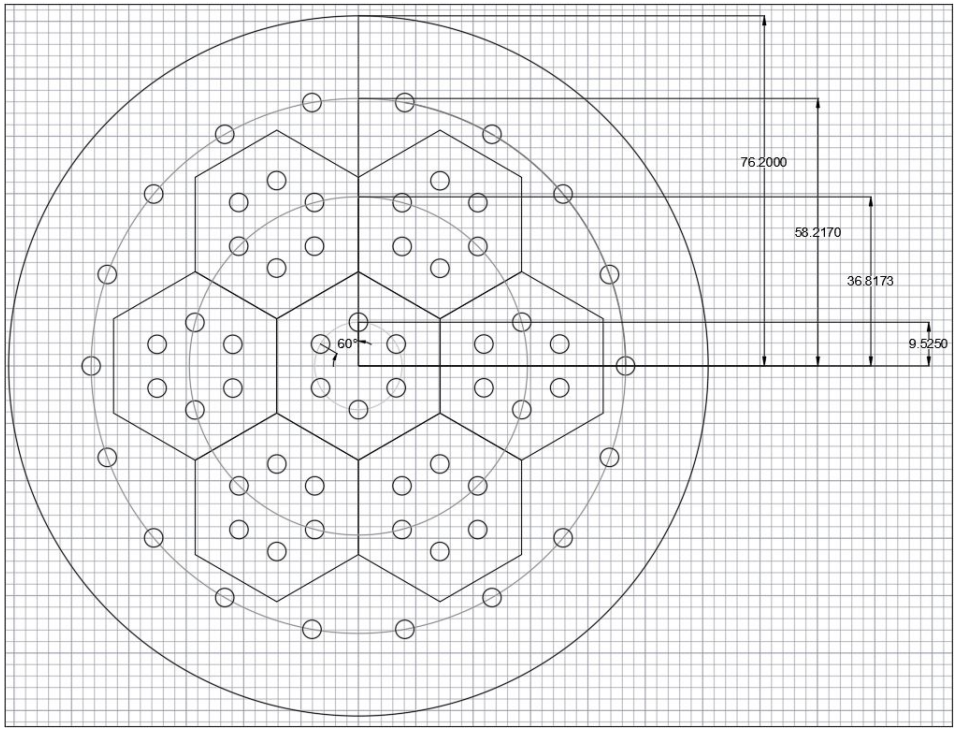
- Why are some particles outside of the defined volumes
- Simulated 10,000 particles but only had roughly 8,500 Events?

Energy Depositions vs Radius

- Simulated 500 electrons as a point source in the middle of the detector
- Recorded energy depositions of all primaries and scattered particles?



PMT Array Plate Drawing



- Used PHASE_II_ARRAY_DRAWING from PSL
- 2 inch radius PMT’s

Next Steps

- Increase complexity of geometry
  - Implement PMT Array Plate
    - Separate class
  - Implement PMT’s
    - Separate class
  - Add optical surfaces
    - What do I need to add and where
- Other suggestions?