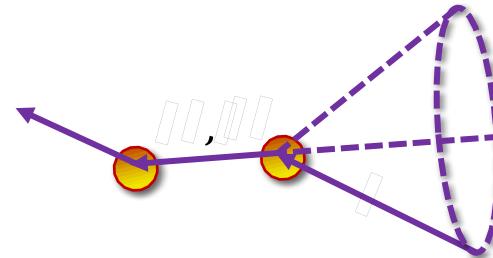




Come learn about the Optically Segmented Approach to the Single Volume Scatter Camera Project

Why are we doing this?

In order to achieve order of magnitude increase in double scatter efficiency, we need to resolve interactions with $O(1\text{cm}/1\text{ns})$ precision.



How are we doing this? The optically segmented approach!

- Prior single bar results indicated this was feasible with $5 \times 5 \times 200 \text{ mm}^3$ EJ-204 Teflon-wrapped bars
- First results from complete 64 bar system show decreased precision... come find out why!
- Other notable results: electronic cross talk SiPM array

A double-scatter event in which the neutron has originated from an angle $\cos \theta = \sqrt{E'_n/E_n}$ in relation to the axis defined by the two scatters, where E_n is the incoming neutron energy and $E'_n = (1/2) m(\Delta d/\Delta t)^2$ is the neutron energy after the first interaction

What have we done so far? Second OS prototype aims to solve issues with modularity

- Improved calibration procedures
- Custom SiPM arrays/acquisition electronics address electronic cross talk
- Several modules undergoing calibrations

