

NEWS-G Sensor Characterization

Tuesday 24 August 2021 14:30 (15 minutes)

NEWS-G's spherical proportional counters feature an 11-anode sensor at their centre. The sensor has two channels through which voltage can be applied, with the north channel serving the 5 northernmost anodes, and the south channel serving the southernmost 6 anodes. The electric field produced in the detector is asymmetrical (due to the rod that connects the sensor to the outer part of the vessel) and thus requires characterization to correctly interpret dark matter search data.

My research this summer has been focused on sensor characterization. I have used different energy sources (Fe-55, Ar-37) and have varied the gas mixture in the detector as well to study the relationship between the voltage applied to the sensor and the resulting signal amplitude across different experimental setups. The goal of this project is to determine a voltage that will reliably yield equal signal amplitude in both channels of the sensor.

Author: BABAYAN, Irina (Queen's University)

Presenter: BABAYAN, Irina (Queen's University)

Session Classification: Session 7