



CrystaLiZe – Solid Xe Detector R&D

Scott Kravitz, Scott Haselschwardt, Peter Sorensen

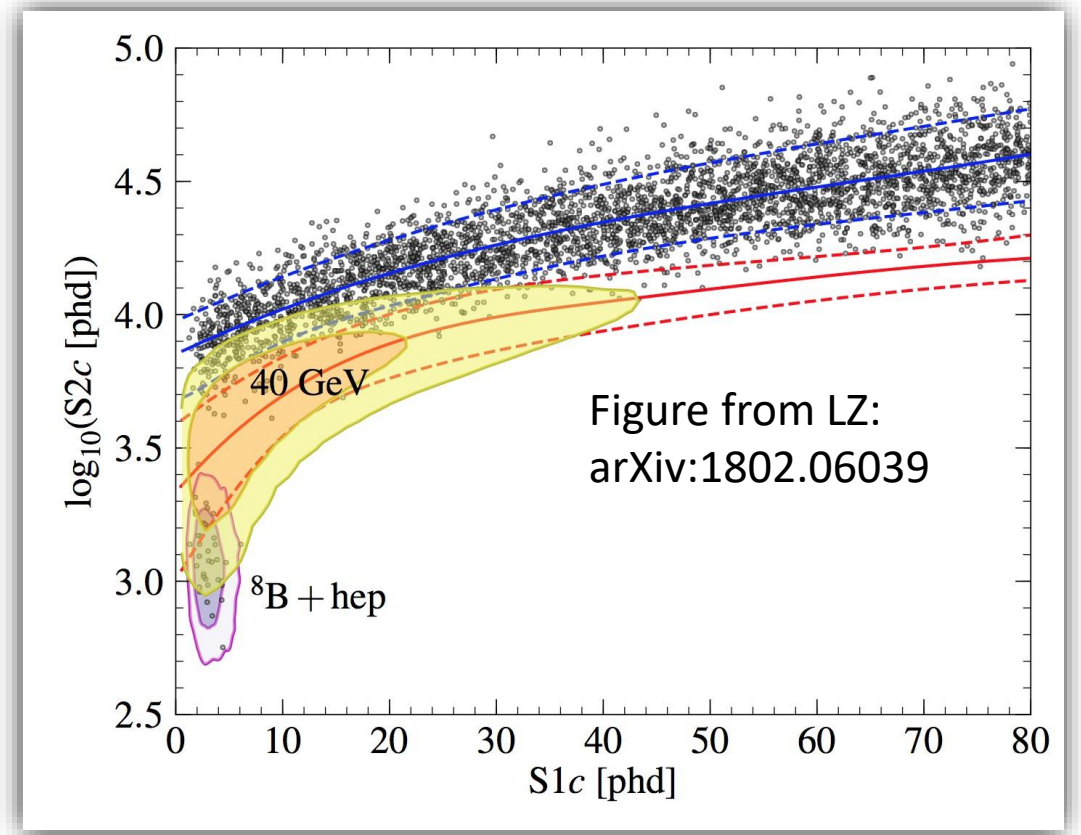
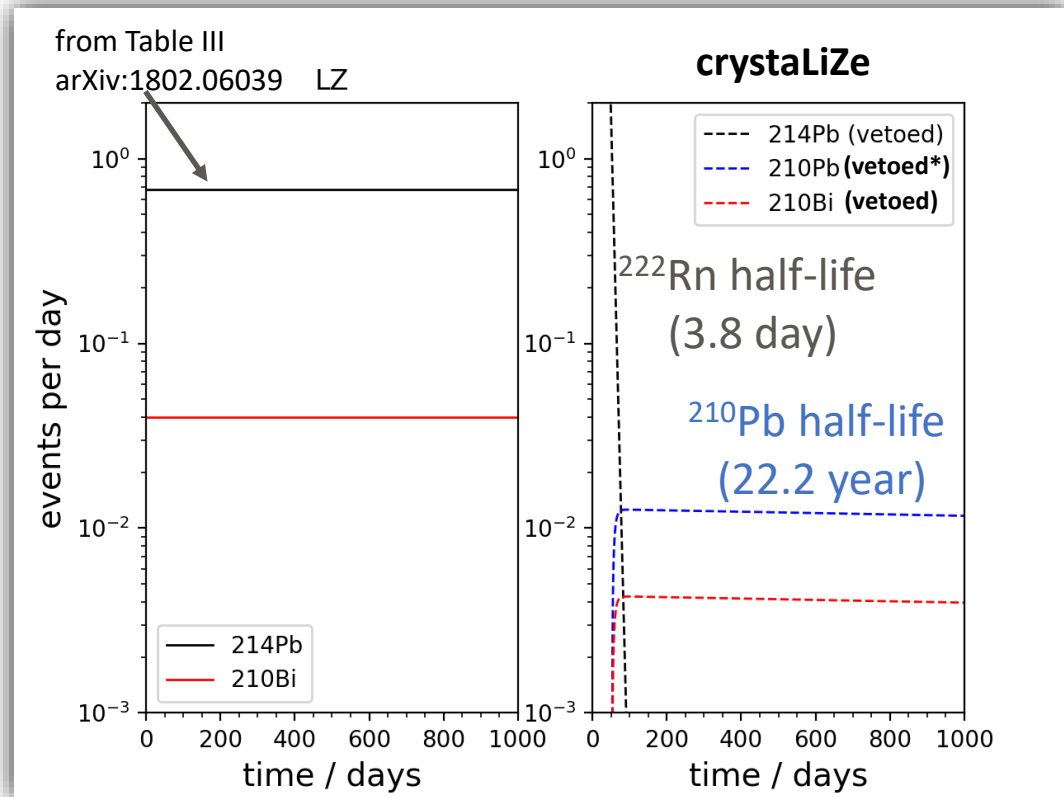
Lawrence Berkeley National Lab

IF-08 Noble Elements Meeting

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Why Solid Xe?

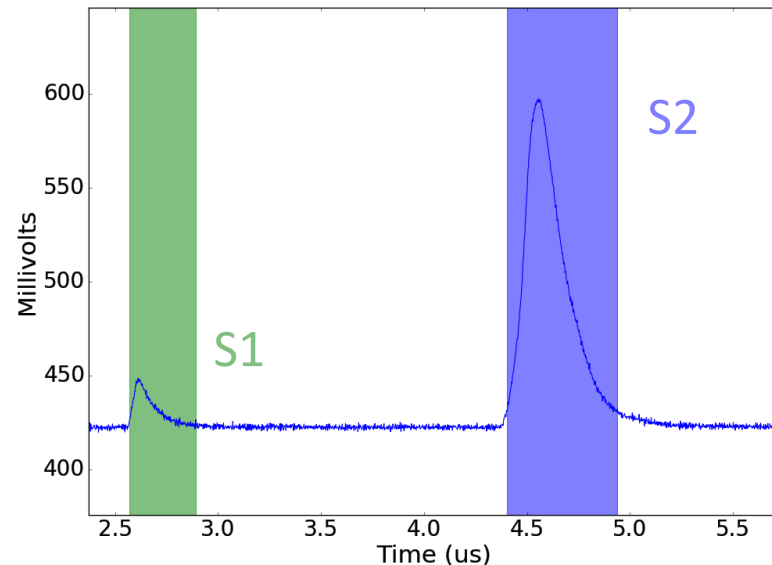
- Rn reduction:
 - Main bkg for LZ expected to be Rn
 - Limits sensitivity *before* neutrino floor



- How it works:
 - Rn excluded from bulk after freezing (diffusion very limited)
 - Existing bulk Rn decays away
 - Can be tagged via Bi-Po coincidence (fixed pos in matrix)

Solid Xe R&D

- Crystal Xe vs LXe detector:
 - Similar light yield
 - e^- drift speed 2x
 - Better ER/NR discrimination? (reduced thermal e^- recombination?)
- R&D two-phase TPC exists
 - S2 detection in crystal established
 - Next explore charge yield vs LXe



Snowmass Early Career (SEC) Activity

- Early career members encouraged to join Snowmass2021 Slack workspace, #snowmass-young Slack channel (open) – instructions on [this page](#)
- Initiatives being considered for Instrumentation Frontier:
 - Availability and need of **instrumentation-focused fellowships** in HEP
 - **Internship** possibilities for those interested in a **career in industry**
 - Opportunities for students at **community and small colleges**, universities
 - Connect expertise/need in **instrumentation across the different frontiers** to help people who switch fields/ frontiers
- Investigating ways to coordinate SEC-focused LOIs