

Sensitivities and Future Outlook for Ge-Mini

Duke

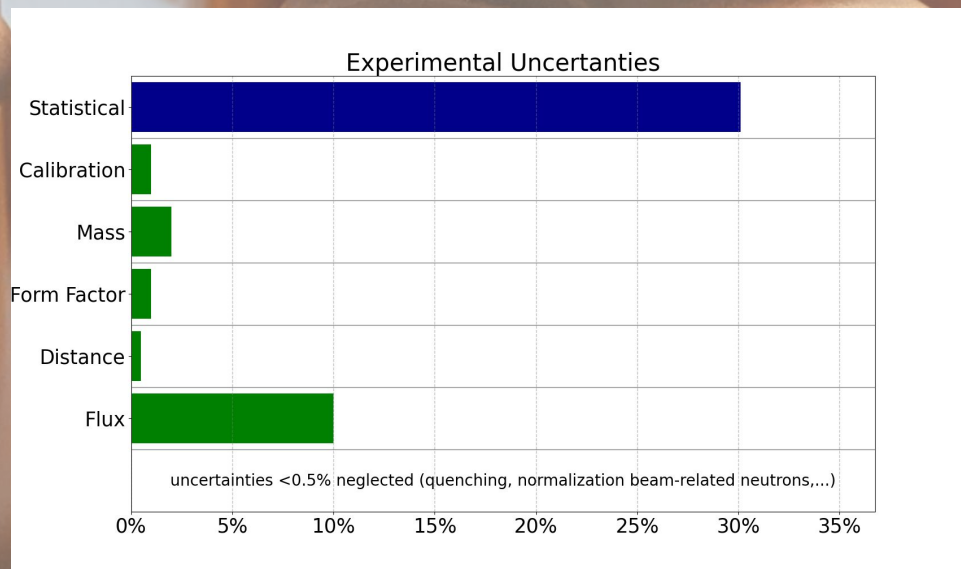
Emma van Nieuwenhuizen



COHERENT is soon entering a period of high-precision CEvNS measurements (Ge, COH-Ar-750, Cryo-CsI).

High-precision measurements may allow searches for NSIs, measure of neutron FFs, constraints on Weak Mixing angle, etc.

Uncertainties for Campaign-2 Ge CEvNS results can be reduced for future campaigns. How will we improve?



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How can we reduce our measured CEvNS xsec uncertainties?

Improvements on neutrino flux uncertainty: D_2O

See G. Li's poster, I. Bernardi and E. Ward's talks



Current uncertainty on SNS neutrino flux: **10%**

Goal: **< 5%**

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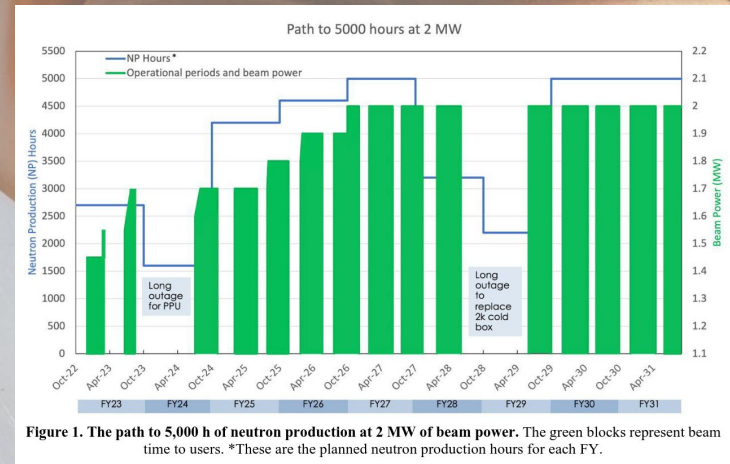
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How can we reduce our measured CEvNS xsec uncertainties?

More stats! Run for longer, with more beam power, and run with full 8-detector array

Update on detector refurbishing work: making “Germanium soup”



Expected beam power and hours for Spallation Neutron Source, now - 2031

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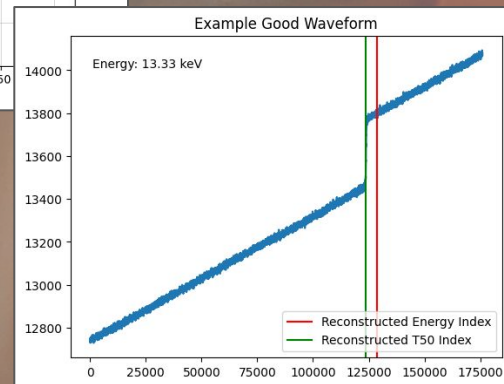
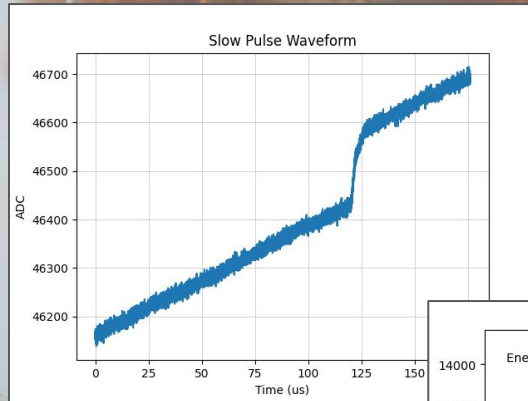
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How can we reduce our measured CEvNS xsec uncertainties?

Improvement in background statistics (slow pulse cuts, more steady-state background collection)

Reduce active volume uncertainty



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How good can we get? Come to my poster to find out!

