Day 3 Sub-Session Introduction:
Nuclear Data And Antineutrino Spectra

June 23, 2021

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Particle Physics: Oscillations

Day Bay, PRD 95 (2017)

Nuclear Data: Validation

M. Estienne et al, PRL 123 (2020)

Applications: Fuel Content

Christensen, et al,
PRL 113 (2014)

$\Delta \chi^2 = 30.8$

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45 days

315 days
Antineutrinos produced by nuclear reactors are potentially useful for

- Non-proliferation and reactor monitoring applications
- Validating other existing and future datasets in the nuclear data pipeline
- Performing fundamental particle physics measurements.

These spheres of application rely to varying degrees on an accurate and precise understanding of the true aggregate antineutrino energy spectrum generated by each primary fission isotope.

The goals of this session are to identify future experimental, theory and software improvements that can expand understanding of directly-measured and indirectly-predicted antineutrino spectra, and to define the extent to which each of these improvements will benefit the three spheres of application described above.

Day 3 Session Goals

Particle Physics: Oscillations

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Day 3 Session Goals

Modeling this chain, in WoNDRAM terms:

Reacto Source Term Calculations (Tue)

Antineutrino Spectrum Calculations (Wed)

Detector Response Calculations (Thu)

*and N per fission

Today
The goals of this session are to identify future experimental, theory and software improvements that can expand understanding of directly-measured and indirectly-predicted antineutrino spectra, and to define the extent to which improvements will benefit the three spheres of application described above.

“How will an improvement of X% in my antineutrino spectrum model / measurement improve my ability to do Y?”
The goals of this session are to identify future experimental, theory and software improvements that can expand understanding of directly-measured and indirectly-predicted antineutrino spectra, and to define the extent to which improvements will benefit the three spheres of application described above.

“Reactor neutrino data is nuclear data. What is needed to get it in the pipeline and maximize its utility as nuclear data?”
The goals of this session are to identify future experimental, theory and software improvements that can expand understanding of directly-measured and indirectly-predicted antineutrino spectra, and to define the extent to which improvements will benefit the three spheres of application described above.

“Fission beta data is nuclear data. What is needed to get it in the pipeline and maximize its utility as nuclear data?”
The goals of this session are to identify future experimental, theory and software improvements that can expand understanding of directly-measured and indirectly-predicted antineutrino spectra, and to define the extent to which improvements will benefit the three spheres of application described above.
Notes

The schedule is very full.

Talks are 10 + 5, unless otherwise specified.
(Sub-session 3 is an exception; no Q&A until end)

We will hold speakers to time to enable sufficient room for questions.

Particle Physics: Oscillations

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