Comments on Paper

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Apologies

- Though I’m on the call I’m on the road, so I may not be able to see everything
- I uploaded everything quite late last night so you haven;t had time to see it till now
- I haven’t made my schematic drawing yet
- I put in a few edits (plurals, adverb locations)

Introduction comments

- More citations on importance of alpha-N backgrounds?
- We should comment on how to get SOURCES4A and its modifications: Oakridge and then personal email with Vitaly (?)
    - Language of SOURCES, point to tutorials?
- USD code should be described more too: that you enter information into a webpage, but do not have access to the code behind the scenes
- Other inputs to the calculations: composition (do both make “natural” materials with the same recipe), density
- Should we also point to our comparison website for more values?

Some confusing things

- Do we need comment on different inputs: differential vs total cross sections?

- This sentence is tough to parse: The column (b) refers to the ratio of radiogenic neutron yield resulting from the same algorithm calculation (SOURCES4A) but with USD (column (3)) and SOURCES4A (column (2)) input (α, n) cross-sections.

- The table is also difficult:

TABLE III. Radiogenic neutron yield (n/s/cm^3) for copper and polyethylene materials and for ^{238}U and ^{232}Th decay chains. Column (1) and (2) refer to pure USD and SOURCES4A calculation, respectively. Column (3) refers to SOURCES4A calculation with USD (α, n) cross section libraries. A ratio of the neutron yield is also provided: column (a) refers to the ratio of (2) over (1), whereas column (b) corresponds to the ratio (2)/(3)

		Neutron Yield ($10^{-12}\cdot$ **n·s^{-1}·cm^{-3}**)			**Ratio**	
Material	**Chain**	**(1)**	**(2)**	**(3)**	**(a)**	**(b)**
Copper	^{238}U	3.46	2.84	2.93	0.8	1.0
	^{232}Th	11.1	9.49	9.18	0.9	1.0
Polyethylene (C_2H_4)	^{238}U	9.56	12.6	16.4	1.3	0.8
	^{232}Th	2.87	5.28	5.97	1.8	0.9

Validation

- Can we comment on validation?
- A paper to read (higher energy) http://journals.aps.org/prc/abstract/10.1103/PhysRevC.92.044601
- Comment that DarkSide uses TALYS https://conferences.pa.ucla.edu/dm16/talks/agnes.pdf
- Other TALYS users near our field (from brief, quick search- I haven't read them yet)
  - http://arxiv.org/abs/1509.07436
  - http://link.springer.com/article/10.1140%2Fepja%2Fi2015-15012-5
  - http://arxiv.org/abs/1306.6210
  - http://inspirehep.net/record/821723