Abstract Submitted
for the APR17 Meeting of
The American Physical Society

^8Be Anomalous Internal Pair Production: Possible E2 Transitions .[1] THOMAS WARD, U.S. Department of Energy, Office of Nuclear Energy, Germantown, Maryland 20874, DAVID KOLTICK, HAOYU WANG, Department of Physics, Purdue University, West Layfacette, IN47906 — Significant enhancement of ^8Be internal pair production at 16.7 MeV with large angle correlations from the 18.150 MeV ($J^\pi = 1^+$) level have been interpreted as a possible dark matter candidate, a light ($J^\pi = 1^+$) neutral boson [PRL 116(2016)042501] or a fifth-force vector gauge boson [PRL 117(2016)071803]. We present a conventional alternative interpretation, unseen E2 transitions from the $J^\pi = 2^+$levels at 16.626 MeV and 16.922 MeV populated in the decay of the 18.150 MeV ($J^\pi = 1^+$) level. The calculated E2 transition probabilities agree well with the measured pair production intensity in the back angle correlation where one expects the E2 gamma-ray correlation to peak. .

[1]Work partially funded under auspices of USDOE-NE Contract DE-DT0004091.

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Date submitted: 24 Jan 2017 Electronic form version 1.4