

Abstract Submitted
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Results from the Complete EXO-200 Dataset¹ TIM DANIELS, UNC
Wilmington, EXO-200 COLLABORATION — EXO-200 was a low-background
time-projection chamber employing a stockpile of 200 kg of xenon enriched to 80.6%
in isotope 136 and located underground at the WIPP site outside Carlsbad NM.
In its first phase of data-taking between September 2011 and February 2014, the
experiment made the first observation of two-neutrino double-beta decay of ^{136}Xe ,
provided the most precise measurement of any two-neutrino half-life to date, and
provided one of the most sensitive searches for neutrinoless double-beta decay. While
the first phase ended with the 2014 fire and radiation events at WIPP, a second phase
of data collection with upgrades including improved energy resolution extended from
May 2016 – December 2018. Analysis of the complete EXO-200 dataset, represent-
ing a total ^{136}Xe exposure of 234.1 kg-yr, results in a lower limit of $3.5 \cdot 10^{25}$ yr on
the zero-neutrino double-beta decay half-life, with a median sensitivity of $5.0 \cdot 10^{25}$
yr.

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SNF in Switzerland, IBS in Korea, RFBR in Russia, DFG in Germany, and CAS
and ISTCP in China

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