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Commissioning of the large-scale LXe detector test platform PANCAKE

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The next generation of liquid xenon (LXe) based dual-phase time projection chambers (TPCs) for dark-matter WIMP searches will supersede the current experiments of this type both in size and sensitivity. The central low-background TPC will not only be challenging because of its dimension of 2.6m in height and diameter, but also due to its low-temperature operation, and the required radio purity levels. Our PANCAKE detector development platform at the University of Freiburg allows for testing flat TPC components of up to 2.6m size. We here present this testing facility with the results of our first full 300kg xenon-run.

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