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Iris Cong*, iriscong23@ucla.edu, and **Meng Cheng** and **Zhenghan Wang**. *Topological Quantum Computation with Gapped Boundaries*.

We study fault-tolerant quantum computation with gapped boundaries. We first present the algebraic/categorical structure of gapped boundaries and boundary defects. These will be used to describe topologically protected operations and obtain quantum gates. Finally, we show how gapped boundaries of the abelian theory $\mathfrak{D}(\mathbb{Z}_3)$ can be used to perform universal quantum computation. (Received September 08, 2016)