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Direct-to-Toffoli Magic-state Distillation BRYAN EASTIN, Northrop Grumman Corporation — In recently proposed quantum computing architectures, approximately 90% of the required resources are consumed during the distillation of single-qubit magic-states for use in performing Toffoli gates. In this talk I describe how the overhead for magic-state distillation can be reduced by merging distillation with the implementation of Toffoli gates. The resulting routines distill single-qubit magic-states directly to Toffoli ancillae, each of which can be used without further magic to perform a Toffoli gate.

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