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Quantum compiling with low overhead GUILLAUME DUCLOS-CIANCI, DAVID POULIN, Université de Sherbrooke — I will present a scheme to compile complex quantum gates that uses significantly fewer resources than existing schemes. In standard fault-tolerant protocols, a magic state is distilled from noisy resources, and copies of this magic state are then assembled into produced complex gates using the Solovay-Kitaev theorem or variants thereof. In our approach, we instead directly distill magic states associated to complex gates from noisy resources, leading to a reduction of the compiling overhead of several orders of magnitude.

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