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Title:

Achievements of the IARPA-QEO and DARPA-QAFS programs, and the prospects for quantum enhancement with quantum annealing

Abstract:

IARPA's Quantum Enhanced Optimization (QEO) program started in June 2017 and was superseded by DARPA's Quantum Annealing Feasibility Study (QAFS) program in Feb. 2020. Both programs have contributed greatly to our understanding of the limitations and potential of quantum annealing, with a focus on more coherent qubits than are available commercially. I will review what has been accomplished under these programs and will discuss the prospects for quantum enhancement with quantum annealing, with a focus on unconventional protocols such as diabatic and reverse quantum annealing.