Benchmarking the D-Wave Two JOSHUA JOB, ZHIHUI WANG,
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— We report on experimental work benchmarking the performance of the D-Wave
Two programmable annealer on its native Ising problem, and a comparison to avail-
able classical algorithms. In this talk we will focus on the comparison with an
algorithm originally proposed and implemented by Alex Selby. This algorithm uses
dynamic programming to repeatedly optimize over randomly selected maximal in-
duced trees of the problem graph starting from a random initial state. If one is
looking for a quantum advantage over classical algorithms, one should compare to
classical algorithms which are designed and optimized to maximally take advan-
tage of the structure of the type of problem one is using for the comparison. In
that light, this classical algorithm should serve as a good gauge for any potential
quantum speedup for the D-Wave Two.

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