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Assessing claims of quantum annealing: Does D-Wave have a quantum computer? JOHN SMOLIN, GRAEME SMITH, IBM T J Watson Res Ctr — There has recently been much publicity surrounding D-Wave's so-called quantum computing machines. Though there is little reason to expect that their highly decoherent devices actually perform quantum computation, they have persisted in making strong claims about the performance of their system in the scientific literature and to the press. Here we focus on showing that the evidence of quantumness given in the literature is extremely weak and is consistent with an effective classical description. We further show by comparing to the performance of classical simulated annealing that the idea that their current machines outperform a classical computers is unfounded.

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