The Large Hadron Collider (LHC) circulates counter-rotating beams of protons in closely packed bunches that cross at designated interaction points. Particle physics experiments at these interaction points detect particles created at each proton-proton (p-p) collision to reconstruct physics at the TeV energy scale. Reconstructing the positions of each p-p collision from the detected tracks of charged particles is thus of primary and paramount importance. We use D-Wave 2000Q quantum annealer to perform this reconstruction on artificial events where the positions of p-p collisions and tracks resemble LHC distributions. We demonstrate this on events with up to 5 p-p collisions, and benchmark it against simulated annealing on a commercial computer. We note an intriguing quantum advantage for the cases of 2 and 3 p-p collisions in an event.

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