

## **b-quark identification at DØ**

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DØ, one of the collider detectors at Fermilab's Tevatron, depends on efficient and pure b-quark identification for much of its high-pT physics program. DØ currently has two algorithms, one based on impact parameter and the other on explicit reconstruction of the B hadrons decay vertex. A third, combined algorithm is under development. DØ certifies all of its b-quark tagging algorithms before they can be used in an analysis: this involves determining efficiencies, fake rates, and, most difficultly, systematic errors. Determining these with enough accuracy requires running over millions of events. There is also a ROOT based infrastructure used by the collaboration to run the various algorithms and correctly compute fake rates and expected efficiencies as well as present basic performance plots. We will present an overview of the algorithms and tools, how the efficiencies are calculated, and the design of some of the more complex parts of the system.

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