

Prospects for b-tagging techniques at the LHC experiments

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The identification of jets originating from a b quark is called b-tagging. It takes advantage of several of the b quark's properties such as the relatively long lifetime of the b-hadron and the therefore existing secondary vertex in the jet. The use of b-tagging is an essential ingredient for the selection of single top events. These contain a b quark from the top quark decay, which makes it possible to distinguish them from events containing only jets from light quarks. There are several b-tagging techniques, most of them requiring a well understood detector. However, there are also some algorithms with decreased performance that are suitable for first data. In this talk an overview over the most important b-tagging algorithms is given. It is motivated why b-tagging is powerful for top quark measurements. The expected performance of selected taggers suitable for either first data or later at ATLAS and CMS is shown.

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