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## **Jet properties of hadronically-decaying massive particles**

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The identification and study of jets originated from the hadronic decays of massive particles, like vector bosons or top quark provide a direct test of QCD calculations of gluon and quark radiation and validate novel techniques of jet shapes and jet substructure for reducing the sensitivity to soft QCD and to multiple proton-proton collisions. A measurement of jet shapes in  $t\bar{t}$  final states using data recorded by the ATLAS detector is presented. Samples of events with top-quark pairs are selected in both the semileptonic and dileptonic decay modes and the differential and integrated shapes of the b-quark jets resulting from the top-quark decays are compared with those of the light-quark jets from the hadronic W-boson decays  $W \rightarrow q\bar{q}'$  in the semileptonic channel.

**Primary author:** BARONCELLI, Toni (Roma Tre Universita Degli Studi (IT))

**Presenter:** CHISLETT, Rebecca Thalatta (University of London (GB))

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