

Jet pull study

The energy flow shape of jets are affected slightly by the "color-connection" between jets. For instance, a color-neutral particle like a Higgs boson decaying to two jets leads to a color-connection between the two jets. This creates a "color-string" to be stretched between the two jets. When that color-string breaks, it releases energy in the form of hadrons, between the two jets, which alters the shapes of the jets.

We would study algorithms for reconstructing the shapes of jets in the ATLAS detector and try to determine which jet pairs in events are color-connected. This algorithm could then be used in various searches for Higgs bosons or new physics at ATLAS.