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Event-shapes and the presence of jets in e+e-and pp collisions (15+3)

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Event-shape observables such as transverse sphericity are widely being used by the particle and nuclear physics community to characterize events and study the underlying physics mechanisms.
In earlier studies these observables proved useful in e+e- collisions to discriminate between di-jet and multi-jet topologies, and more recently were exploited in pp collisions.
However, by using events produced with the PYTHIA event generator, we have found that in pp collisions the correlation between event-shape observables and jets is far weaker than is the case in e+e- collisions. Rather, there is an indication that event-shapes in pp collisions are sensitive to the amount of multi-parton interactions, which motivates further investigation of the use of these observables in a new way.
In this talk we present results that support our claim that event-shapes in pp collisions are sensitive to fundamentally different event characteristics and physics mechanisms compared to the same observables in e+e- collisions, which is contrary to what the community has claimed thus far.

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