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The BEST Searches for Vector Like Quarks at CMS

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Abstract: The Boosted Event Shape Tagger is a multi-class jet tagger optimized for the diverse final states inherent to all-hadronic decays of Vector-Like Quarks. Its architecture is a simple DNN whose discriminating power benefits from physics-driven observables calculated in the lab frame, but also in a series of Lorentz-boosted frames aiming to provide the network with over/rest/under-boosted frame information. The tagger is applied to a search for pair-produced Vector-Like Quarks, each which decay to a third-generation quark and a massive boson, for T- and B-like interpretations in the all hadronic channel.

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