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# Extra-Dimensions and other Exotic searches with Dijet and Monojet events with the CMS detector

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High transverse momentum jets are a powerful tool for discovery of new physics in the early running stages of the CERN LHC pp collider.
CMS collaboration will analyze jets in the so called monojet and dijet events to probe exotic physics beyond the standard model.
Here we present in detail search plans for different initial integrated luminosities and LHC energies scenarios.

The missing transverse energy + monojet signature has been investigated as a probe for the discovery of large extra dimensions,
as predicted by phenomenological ADD model, with the CMS detector. Signal and background samples were simulated and studied in detail.
Techniques to estimate the background contributions via data-driven methods are discussed.
The discovery reach is studied for initial luminosities at LHC at $\sqrt{s}$ = 14 TeV and $\sqrt{s}$ = 10 TeV.
taking into account systematic uncertainties. It is shown that a significant improvement of the existing limits can be obtained with early data.

Concerning the dijets, we present CMS plans to search for physics beyond the standard model and studies of jet trigger, jet cleanup, jet response versus $\eta$, optimization of $\eta$ cuts, and the dijet mass resolution.
Estimates are presented for both the QCD background and signals of new physics with a focus on the integrated luminosities 10 pb$^{-}$1, 100 pb$^{-}$1, and 1 fb−1 expected
early in LHC running. The inclusive cross section as a function of jet $p_T$ is a first simple measure of QCD dijets which is sensitive to a 3 TeV
contact interaction with only 10 pb$^{-}$1. With the dijet mass distribution we expect to be able to convincingly observe dijet resonances with large cross sections, such as a 2
TeV excited quark which produces a 13 $\sigma$ signal with 100 pb$^{-}$1. With the dijet ratio, a simple angular measurement, we expect
to be able to discover a contact interaction scale $\Lambda$+ of 4, 7 and 10 TeV for integrated luminosities of 10 pb$^{-}$1, 100 pb$^{-}$1, and 1 fb$^{-}$1 respectively. Using the dijet ratio
we can discover or confirm a dijet resonance, and eventually measure its spin. With 100 pb$^{-}$1 a 2 TeV resonance with the production rate of an excited quark produces a convincing signal in the dijet ratio.

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