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Measurement of Drell-Yan and associated jet cross section at low and high invariant masses

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Measurements of the differential Drell-Yan and associated jet cross section as a function of the Drell-Yan mass are presented using an integrated luminosity of 4.9 fb-1 in the dimuon channel of proton-proton collision data recorded with the CMS detector at the LHC at sqrt s =7 TeV. Cross sections as a function of the Drell-Yan transverse momentum are measured differentially in the Drell-Yan mass range of 30 to 1500 GeV. The pt spectrum of the Drell-Yan allows to study multiple-gluon emissions and resummation effects. The cross section for Drell-Yan production in association with one or two jets with pT > 30 GeV in the range | eta | < 4.5 are measured. Multi-jet emissions in a rapidity interval between the DY and the leading jet is a sensitive probe for multi-gloun emissions. The jet multiplicity in Drell-Yan production as a function of the rapidity separation of the leading jet and the Drell-Yan is presented. All measurements are compared to Monte Carlo predictions including matrix elements plus parton showers.

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