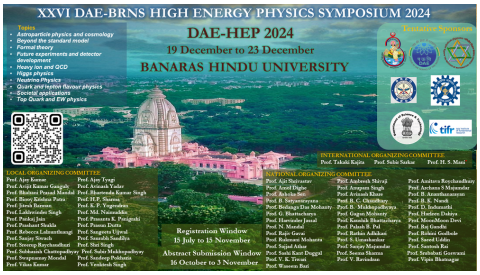

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Measurement of differential cross section of $t\bar{t}$ production in boosted phase space with the dileptonic final state at 13 TeV with CMS experiment

The top quark pair production ($t\bar{t}$) is an extremely vital process as that constitutes a major background for many new physics searches. Although it is a well-understood process, CMS and ATLAS experiments have reported a difference in the top quark momentum spectrum compared to theoretical predictions, particularly at large transverse momentum. We are measuring $t\bar{t}$ production cross section in final states with two light leptons targeting the phase space with highly energetic top quarks, leading to the merging of their decay products into large-radius jets, using the data collected by the CMS experiment at a center-of-mass energy of 13 TeV during LHC Run 2. A machine learning based method is developed to reconstruct energetic top quarks decaying to leptonic final states. In this talk, I will present the details of the top tagging method and share preliminary results of the measurement.

Field of contribution

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