

Differential cross-section measurement of the associated production of a top-quark pair and a Z boson

Monday 24 June 2019 16:40 (20 minutes)

Increasing center-of-mass energy of $\sqrt{s}$ collisions and higher luminosity at the LHC enables us to study rare processes of the Standard Model. This analysis uses full Run 2 data with total integrated luminosity of 139 fb^{-1} for the first differential measurement of $t\bar{t}$ production cross-section at the ATLAS experiment. The methodology of the measurement is based on the Iterative Bayesian Unfolding (IBU). This method, which is based on Bayes' theorem, does not require matrix inversion and is theoretically well grounded. Together with iterative approach, the IBU ensures relatively fast and stable convergence to final unfolded distribution. The preliminary results for tetralepton signature, where 4 leptons are identified in the final state (dileptonic decay of top-quark pair and leptonic decay of Z boson to two charged leptons), will be presented.

Authors: BABAL, Dominik (Comenius University (SK)); DUBOVSKY, Michal (Comenius University (SK)); RACKO, Michal (Comenius University (SK)); BARTOS, Pavol (Comenius University (SK))

Presenter: BABAL, Dominik (Comenius University (SK))