Contribution ID: 20

Type: 10 minutes talk

## Studies on resolved and boosted overlaps in the HH to bbtautau processes

Thursday 5 December 2024 10:55 (15 minutes)

This work is based on the study of the production of Higgs pairs decaying into bbtautau for high pT (boosted regime). Boosted HH produces highly collimated jets, which sometimes is an inconvenient since conventional methods to reconstruct jets might not be good enough to identify the content of these jets at all. Thus, we focus on the study of the substructure of jets and kinematic variables at first level (pT and mass of the main objects) to identify which reconstructed jets might contain boosted bb or tautau pairs and categorize them into different regions of study (RR, RB, BR and BB where R and B refers to resolved and boosted jets for bb and tautau possible combinations). This methodological approach provides a way to study the overlap region between the resolved analysis (already available for the easyjet framework in the ATLAS community) and the boosted analysis (the framework we developed during this work), which hopefully would lead to understand this overlap and find a baseline to separate the resolved and boosted events.

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Session Classification: LHC and Neutrino experiments