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Performance of Missing Transverse Momentum Reconstruction in High Pile-Up

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Missing Transverse Momentum is an extremely important quantity in the searches for RPC Supersymmetry. The accurate reconstruction of this quantity in high pile-up conditions is challenging. Missing transverse momentum is reconstructed from the vector sum of reconstructed objects. Energy from pile-up collisions enter jet cones altering the scale of jets and also increasing the resolution. Additionally jets from pile-up can be reconstructed and included in the missing transverse energy calculation. Methods to improve the reconstruction of missing transverse momentum have been developed through improving the resolution of jets, and selection of jets that should be included in the calculation. These will be presented and the residual pile-up dependence shown. The significance of the observed missing transverse momentum offers a powerful discriminant and techniques to evaluate this based on the objects in a given event has been developed and will also be presented.

Parallel Session

Supersymmetry: Models, Phenomenology and Experimental Results

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Session Classification: Supersymmetry: Models, Phenomenology and Experimental Results