CMS Pixel Hit Reconstruction Using Cluster Templates and its Impact on Tracking and b-Tagging DAVID FEHLING, Johns Hopkins, CMS COLLABORATION — We present a novel technique for reconstructing hits in the CMS pixel detector based on fits o the observed spatial charge distributions to the templates obtained from a detailed simulation. This technique suppresses resolution tails and provides cluster shape information that is useful in track seeding. We present the improvement this approach brings track reconstruction and the b-tagging using the baseline algorithms currently in use in CMS.

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