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Unfolding as a Solution to the Non-binomial Efficiency Correction for Higher Moments of Multiplicity Distribution

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We apply the iterative Bayesian unfolding method provided by RooUnfold package in the non-binomial efficiency correction problem for higher moments. We study the non-binomial efficiency distribution such as beta-binomial and hypergeometric distributions in this work. We also consider the efficiency with multiplicity dependence and the effect of track merging, which will lead to non-binomial detector response. With comparison to the previous efficiency correction method for cumulants, we find that the unfolding method has improvement in the non-binomial efficiency correction.

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