

## Likelihood based approach to the estimation of the background induced by the misidentification of a jet as a photon at pp collider experiment

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The background induced by misidentification of a jet as a photon is usually estimated using two-dimensional sideband method (ABCD-method). This report is devoted to an alternative approach to the estimation based on maximum likelihood method which doesn't require the optimization of ABCD regions boundaries, which results in much faster estimation. This method has not been applied to the estimation of the background induced by misidentification of a jet as a photon before. One of the main advantages of the developed method is that it takes into account data, signal and all other backgrounds distributions, which allows better estimation accuracy. The estimates derived with the considered method based on several variables distributions were confirmed by standard ABCD-method.

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