

# Fit of weighted histograms in the ROOT framework.

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Weighted histograms are often used for the estimation of a probability density functions in High Energy Physics. The bin contents of a weighted histogram can be considered as a sum of random variables with random number of terms. A generalization of the Pearson's chi-square statistics for weighted histograms and for weighted histograms with unknown normalization has been recently proposed by the first author. The usage of these statistics provide the possibility of fitting the parameters of a probability density functions. A new implementation of this statistical method has been recently realized within the ROOT statistical framework using the MINUIT algorithm for minimization. We will describe this statistical method and its new implementation including some examples of applications. A numerical investigation is presented for fitting various histograms with different numbers of events. Restrictions related with the application of the procedure for histograms with small statistics of events are also discussed.

## Summary

### Presentation type (oral | poster)

oral

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**Session Classification:** Poster session

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