"User guide" of the code

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February 22, 2021

1 Instructions

▶ Compile the code, type ".L main.cpp++" in ROOT;

▶ Enter the name of the produced particle you want to study: p+p̄ or ϕ mesons;

▶ Give the kind of collisions: pp or Pb-Pb;

▶ The code will choose the thermal functions (exponential law, Boltzmann law, blast-wave model) for Pb-Pb collisions and the Lévy-Tsallis function for pp collisions ;

▶ output graphs : one data-fit graph ;

▶ Compile the code ".L contours.C++" in ROOT;

▶ output graphs : One plot CONTOUR graph ;

2 Github content

The github link is contains several files:

▶ the subject of the project named : TIPP_ALICE.pdf ;

▶ the 2 data folders:

→ 1 data folder for the production of $p + \bar{p}$ (named ???) containing the data;

→ 1 data folder for the production of ϕ mesons named ???; Each data folder contains different files: differential production rate for different p_T, the uncertainties due to the measures and the systematic uncertainties.

▶ the C++ files containing our code:

→ a header: *Header.h*

$\rightarrow$ a file containing the main code: *main.cpp.*

$\rightarrow$ a file containing every functions called in the main code: *function.cpp*

$\rightarrow$ a file containing the code to merge the contours file: *contours.C.*

$\rightarrow$ two files containing the code to merge the data-model plot : *PbPb_data_model.C* and *pp_data_model.C.*

▶ two files named "resultat_proton_pp.txt" and "resultat_proton_PbPb.txt" containing the results for the proton analysis.

▶ two files named "resultat_meson_pp.txt" and "resultat_meson_PbPb.txt" containing the results for the meson analysis.

3 Content of the C++ files

▶ Header.h contain the prototype of the function ;

▶ The main.cpp will gather the data from de data files and output results in the txt files and the root files ;

▶ The contours.C will gather the results from the root files and plot the contours plot ;

▶ (Work in progress) The PbPb_data_model.C and pp_data_model.C will gather the results of the root files and plot the ratio model over data for both particle. ;