

Fig.2 Dalitz plot of the acceptance

The BDT cut was applied to the simulated data file and this file was used to construct the acceptance using the Macro “PID_Cut.C” which is a slightly modified version of the original Macro provided (many points to highlight here,:first, the MC goes through the same preselection criteria as the data but this was already done by Carolina, I only applied a BDT cut, the same as the data file. Second, the acceptance is always constructed using the PID weight specified in the Macro given above. Third, I never performed any MVA that was already done by Carolina). The points in the histogram are filled with weight $w = (p_{2_x} \cdot p_{3_x}) / (p_{2_y} \cdot p_{3_y})$ where $x = \text{PIDEff_2D_onlyAdditional}$ and $y = \text{PIDEff_2D_onlyTrigger}$ (written in this way to avoid confusion). The Dalitz is declared with 20x20 bins. The acceptance plot is shown in Fig 2.

The acceptance plot is then divided by the a simulation Toy generated in Laura++. The Toy is generated to obtain the dynamical part of the process with 40M of events and it is shown in Fig.3. (This Dalitz plot is constant through the entire phase space, in Laura++ it can only be generated as a folded DP but in the analysis it is important to remember that the all the DP's used must be unfolded for GooFit to performed a good fit. Also, we divide the acceptance by this MC because we want to get rid of kinematics in the DP and only conserve the effects of the detector)

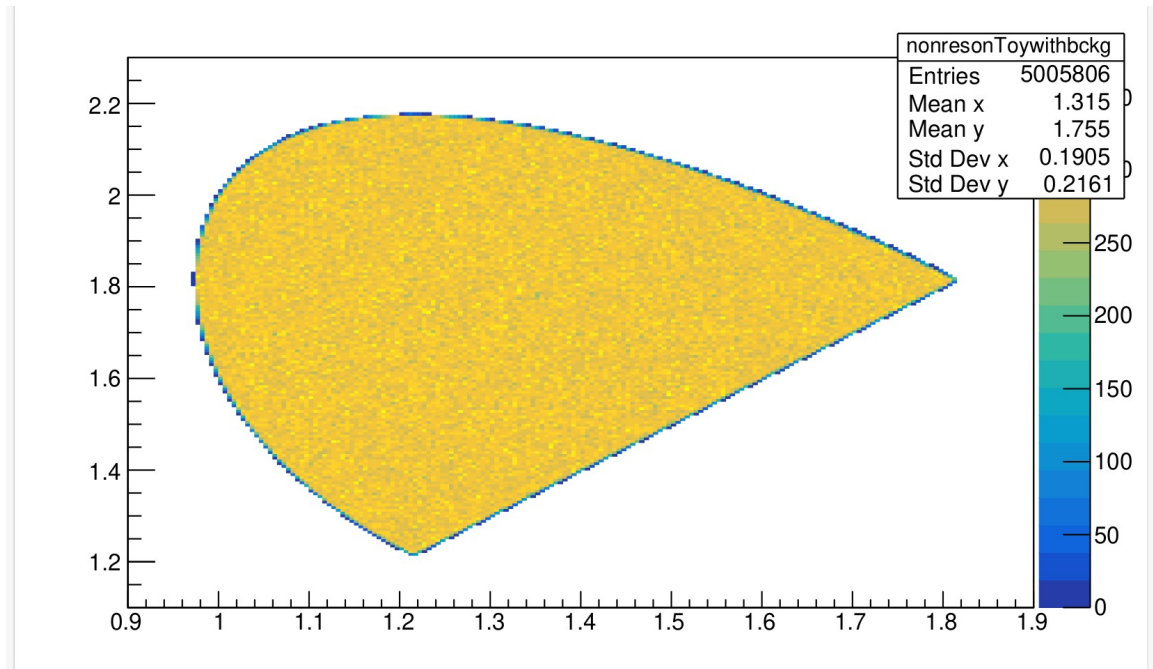


Fig. 3 Dalitz Plot of the toy generated in Laura++ to account the dynamical (kinematical I mean)part of the effciciency distribution

The efficiency obtained is shown below:

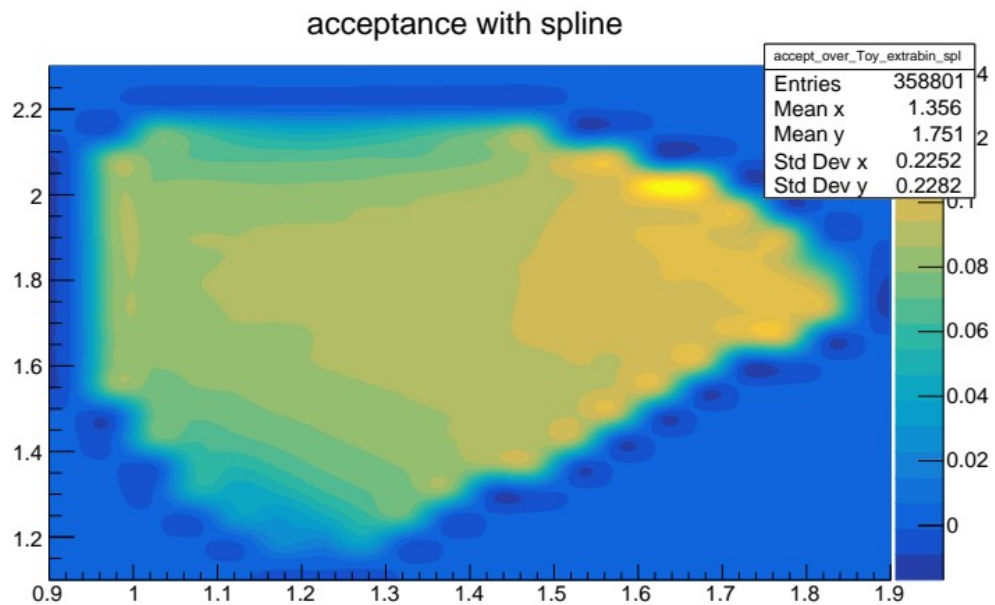


Fig. 6 Efficiency histogram used in the Laura++/GooFit isobar model fit (only in the beginning)

The acceptance and background(the way in which the background is constructed is irrelevant in this case because we are performing a background parametrization and we do background studies so this background is irrelevant)histograms used to fit the data set are shown below:

