# Hypothesis plots summary

1666957, Gustavo Espinal Lugo

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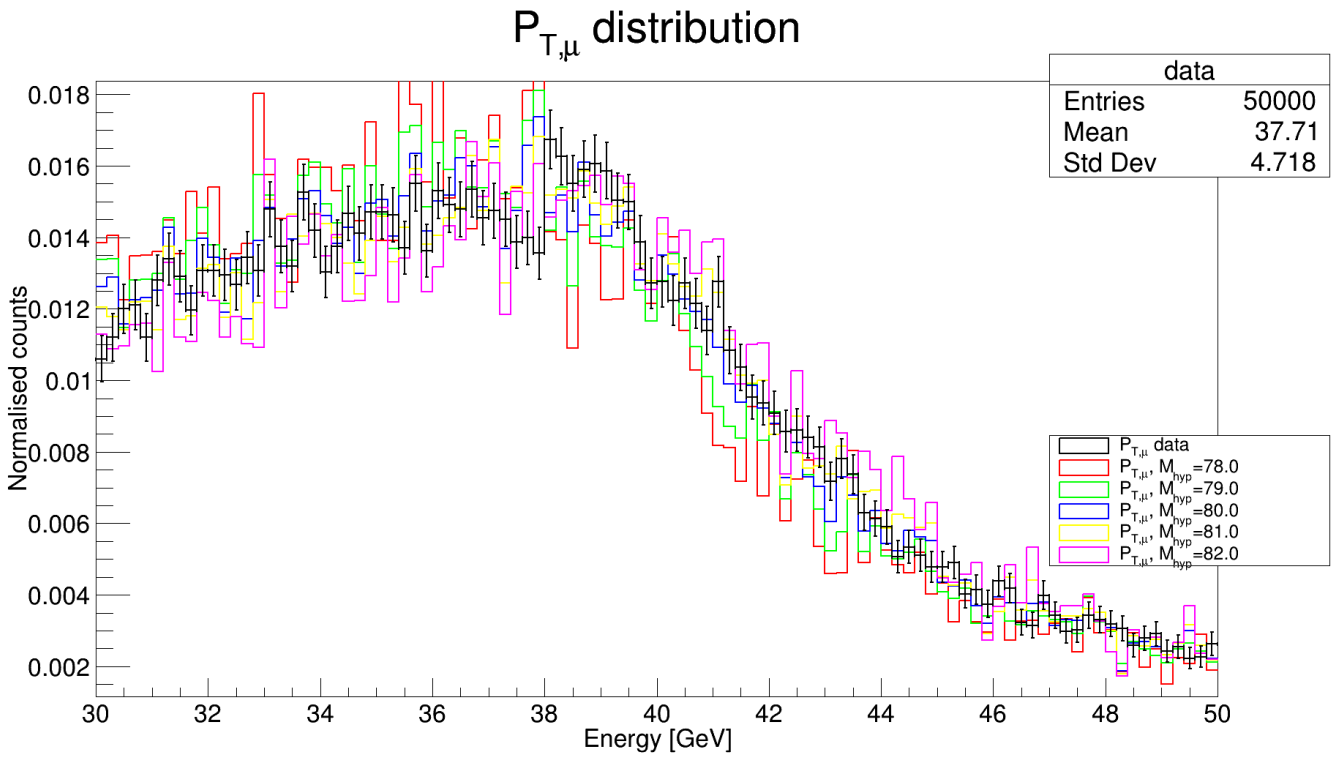
## Plots and corresponding metadata

Number of data points used: 99999,
mean expected W mass: 80.36010913 $[GeV/c^2]$,
mean hypothesis masses $[GeV/c^2]$: [¡generator object ¡genexpr¿ at 0x7efe3f292510¿],
mass width: 2.07041274 $[GeV/c^2]$,
chi_square value of hypothesis fit: 4.4227748580892285
Absolute path to figure: /home/physics/phuxdp/Desktop/PX402 Physics Project/WBosonProject/noQED/plots
Next lines are the data of the shown histograms (if needed):
All quantities: 99999, 80.36010913, [78. 79. 80. 81. 82.], 2.07041274, 4.4227748580892285
X_energ_vls = [30.1, 30.299999999999997, 30.5, 30.700000000000003, 30.9, 31.1, 31.299999999999997,
31.5, 31.700000000000003, 31.9, 32.1, 32.3, 32.5, 32.7, 32.9, 33.1, 33.3, 33.5, 33.7, 33.9, 34.1,
34.3, 34.5, 34.7, 34.9, 35.1, 35.3, 35.5, 35.7, 35.9, 36.1, 36.3, 36.5, 36.7, 36.9, 37.1, 37.3, 37.5,
37.7, 37.9, 38.1, 38.3, 38.5, 38.7, 38.9, 39.1, 39.3, 39.5, 39.7, 39.9, 40.1, 40.3, 40.5, 40.7, 40.9,
41.1, 41.3, 41.5, 41.7, 41.9, 42.1, 42.3, 42.5, 42.7, 42.9, 43.1, 43.3, 43.5, 43.7, 43.9, 44.1, 44.3,
44.5, 44.7, 44.9, 45.1, 45.3, 45.5, 45.7, 45.9, 46.1, 46.300000000000004, 46.5, 46.7, 46.9, 47.1,
47.300000000000004, 47.5, 47.7, 47.9, 48.1, 48.300000000000004, 48.5, 48.7, 48.9, 49.1, 49.30000000000
49.5, 49.7, 49.9]
Y_data_bin_cnts = [266.0, 281.0, 301.0, 304.0, 281.0, 321.0, 336.0, 324.0, 300.0, 328.0, 328.0,
325.0, 318.0, 337.0, 328.0, 371.0, 345.0, 331.0, 383.0, 356.0, 327.0, 345.0, 368.0, 354.0, 369.0,
369.0, 367.0, 344.0, 389.0, 342.0, 384.0, 374.0, 371.0, 385.0, 365.0, 370.0, 364.0, 348.0, 351.0,
340.0, 420.0, 408.0, 389.0, 399.0, 403.0, 398.0, 377.0, 376.0, 348.0, 319.0, 320.0, 307.0, 319.0,
305.0, 286.0, 320.0, 272.0, 260.0, 239.0, 235.0, 228.0, 215.0, 216.0, 211.0, 204.0, 180.0, 196.0,
185.0, 158.0, 154.0, 148.0, 127.0, 134.0, 128.0, 120.0, 120.0, 123.0, 101.0, 104.0, 94.0, 110.0,
105.0, 81.0, 79.0, 100.0, 86.0, 75.0, 76.0, 86.0, 83.0, 80.0, 77.0, 65.0, 70.0, 73.0, 61.0, 64.0, 56.0,
57.0, 66.0]
Y_model_bin_cnts = [276.93023681640625, 266.4456481933594, 268.41180419921875, 283.213562011718
284.0470275878906, 251.14630126953125, 325.6341552734375, 274.7048645019531, 271.836303710937
305.3310546875, 299.5513000488281, 274.57220458984375, 288.62127685546875, 270.2326354980469,
267.7138366699219, 396.50494384765625, 294.8599853515625, 357.4852600097656, 338.554809570312
358.7528076171875, 330.4515075683594, 344.71673583984375, 299.2892150878906, 299.913726806640
317.0308532714844, 363.6265869140625, 298.5186767578125, 328.7791442871094, 386.076477050781
305.718994140625, 322.8080139160156, 350.8438720703125, 341.25885009765625, 408.433624267578
371.0982666015625, 394.10107421875, 290.3528747558594, 374.34332275390625, 342.9143371582031,
393.4912109375, 356.8514404296875, 368.5692138671875, 374.96185302734375, 378.3891906738281,
385.7430725097656, 365.4502868652344, 384.804931640625, 379.839111328125, 320.8994445800781,
307.15509033203125, 356.5126953125, 332.96112060546875, 347.9140319824219, 318.1734619140625,




339.9112243652344, 341.9465026855469, 278.9992980957031, 242.48016357421875, 269.86325073242
270.4671936035156, 220.29945373535156, 180.79222106933594, 251.67237854003906, 194.9679260253
191.2952117919922, 217.257080078125, 208.83395385742188, 178.58535766601562, 196.30352783203
184.05862426757812, 155.99424743652344, 192.88046264648438, 163.90553283691406, 142.65873718
161.1498565673828, 109.65188598632812, 106.79487609863281, 112.27214050292969, 120.26044641
67.11335754394531, 90.34393310546875, 118.6343765258789, 92.7890396118164, 130.8133544921875,
91.84986877441406, 86.48822784423828, 90.47335052490234, 90.51984405517578, 98.55259704589844
80.27766418457031, 58.94035720825195, 42.623714447021484, 73.8402328491211, 68.56688690185547
69.27615356445312, 55.036808013916016, 65.38597106933594, 90.8377914428711, 58.06388854980469
54.15039825439453]

Found optimal massses ($\chi^2$ roots): [80.46868946] $[GeV/c^2]$
Uncertainty [GeV/c$^2$] : $2.842170943040401e-14$

Notes:
1) Using mu_born_PT as pseudodata and Mu_Pt as model/hypothesis
2) Using full run mode

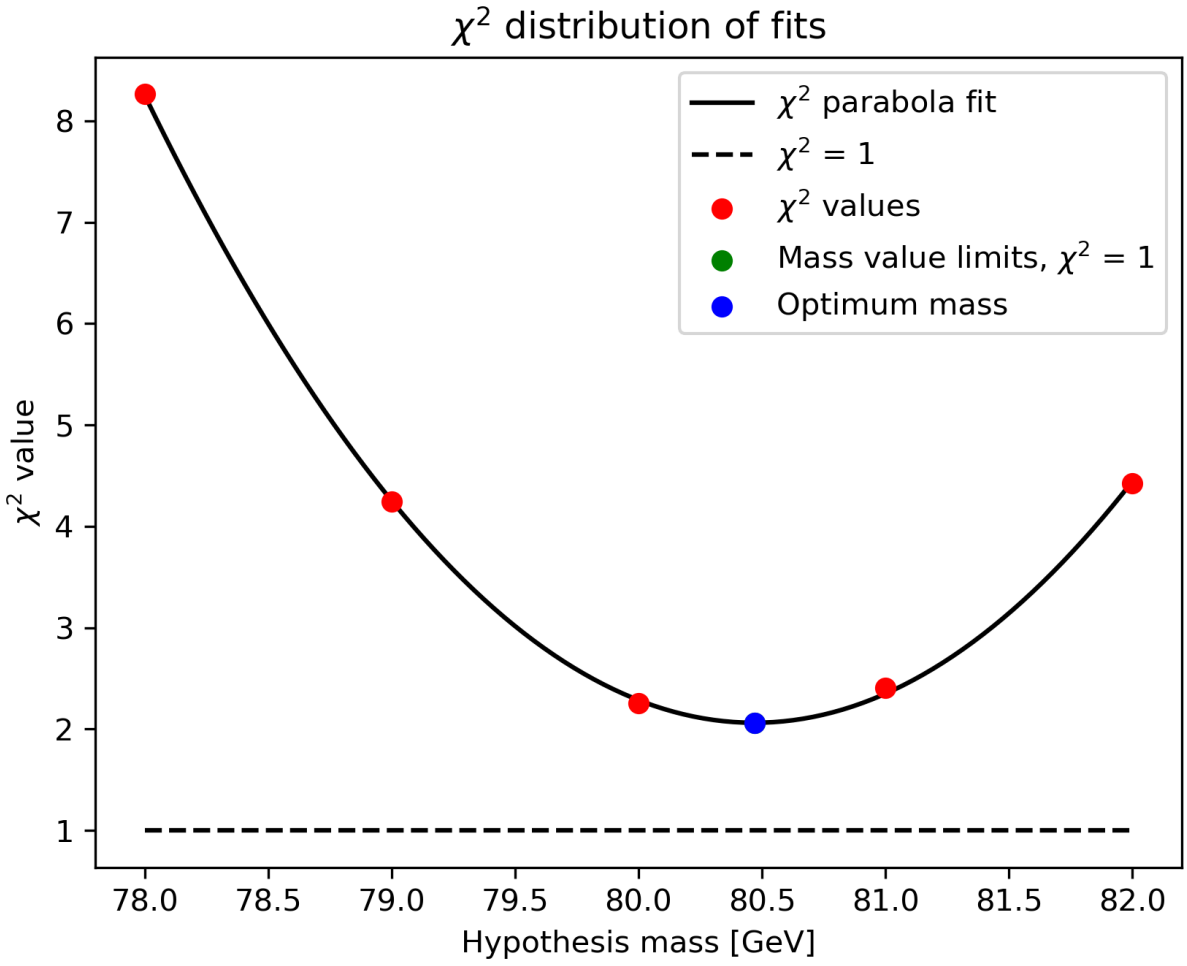



Figure 2: $\chi^2$ of hypothesis masses.

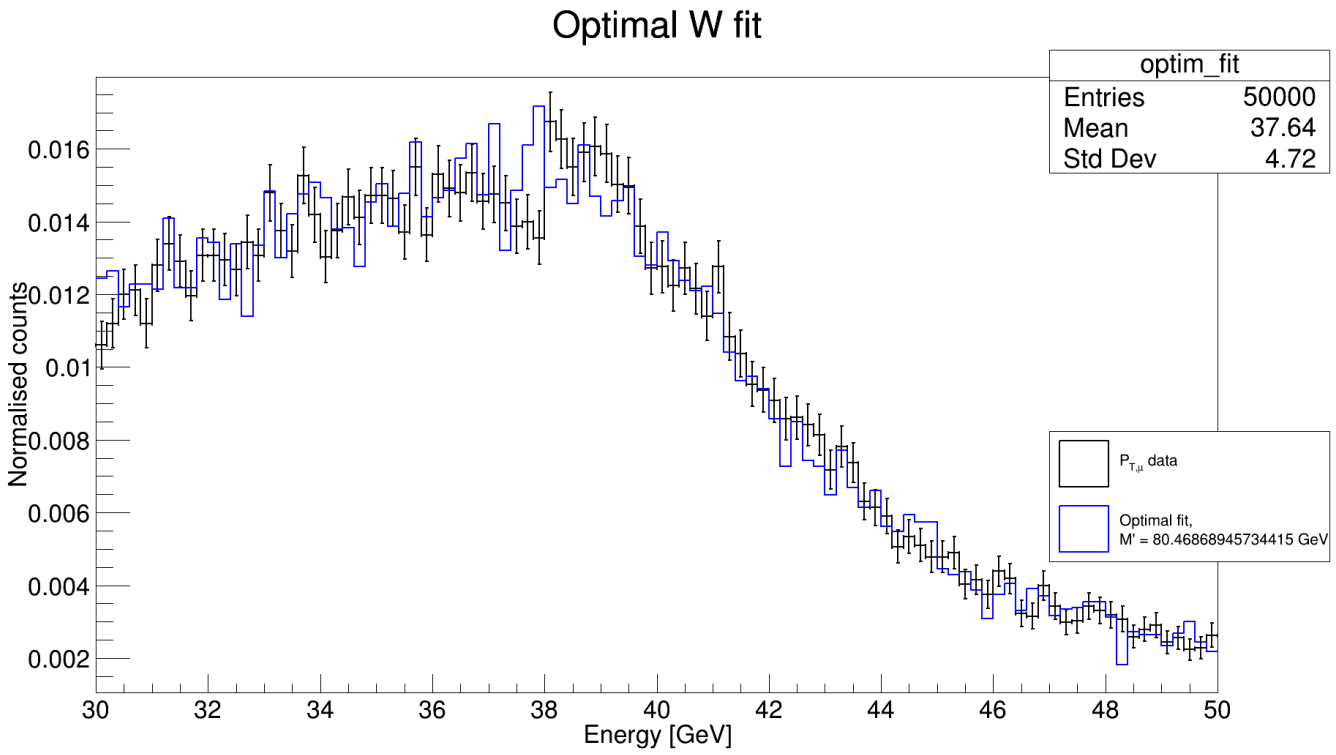



Figure 3: Data and optimum fit with $\chi^2 = 2.1701401189399325$. Used the hypothesis mass of 80.46868945734415 $[GeV/c^2]$.