

Hypothesis plots summary

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Plots

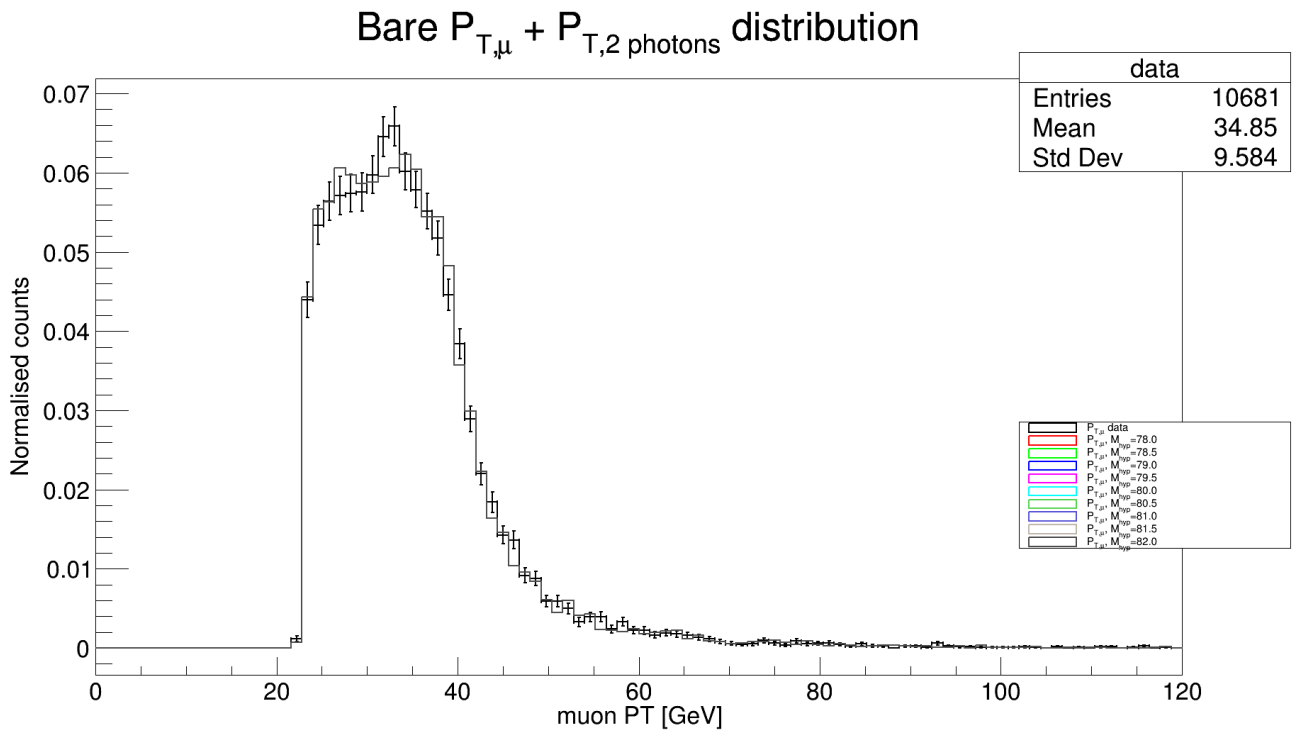


Figure 1: Hypothesis masses [78. 78.5 79. 79.5 80. 80.5 81. 81.5 82.].

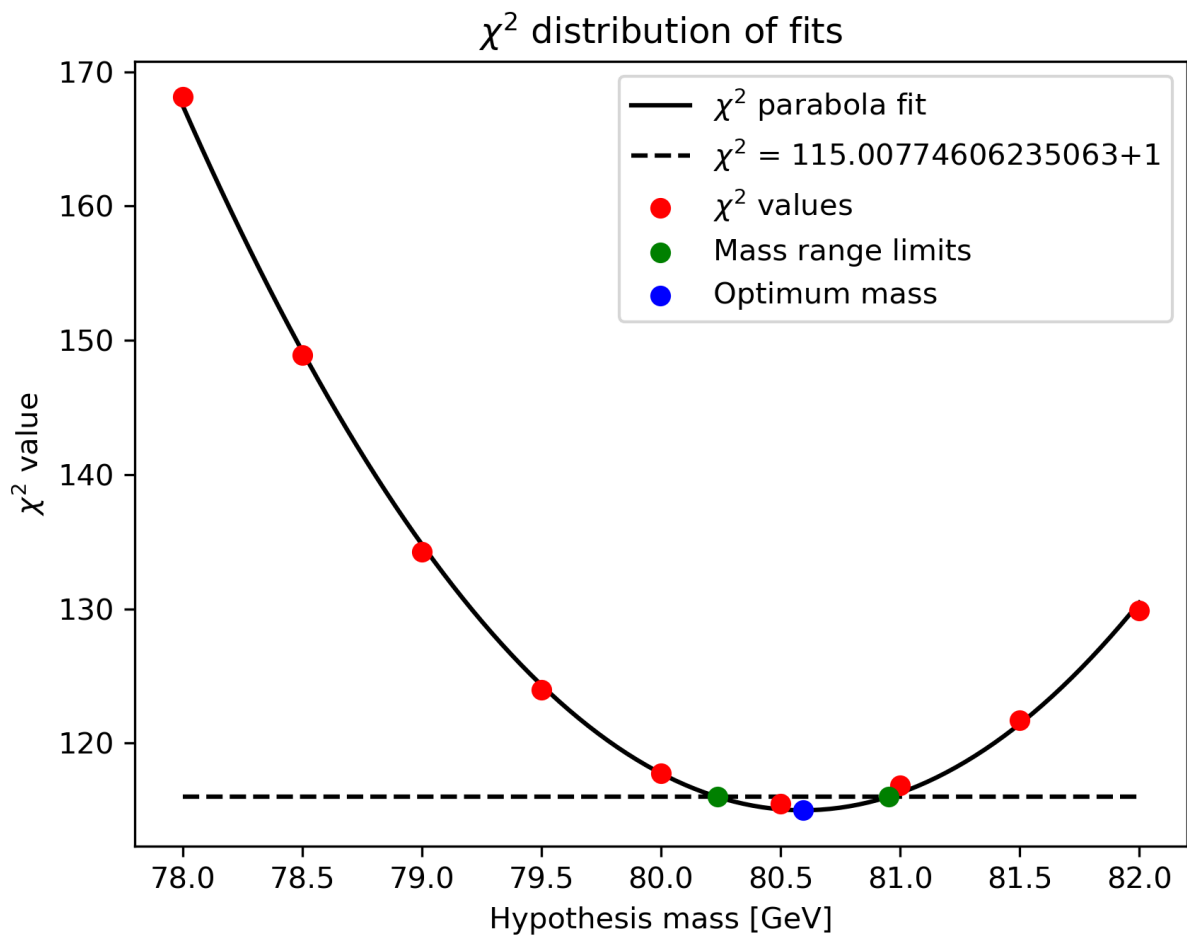


Figure 2: χ^2 of hypothesis masses.

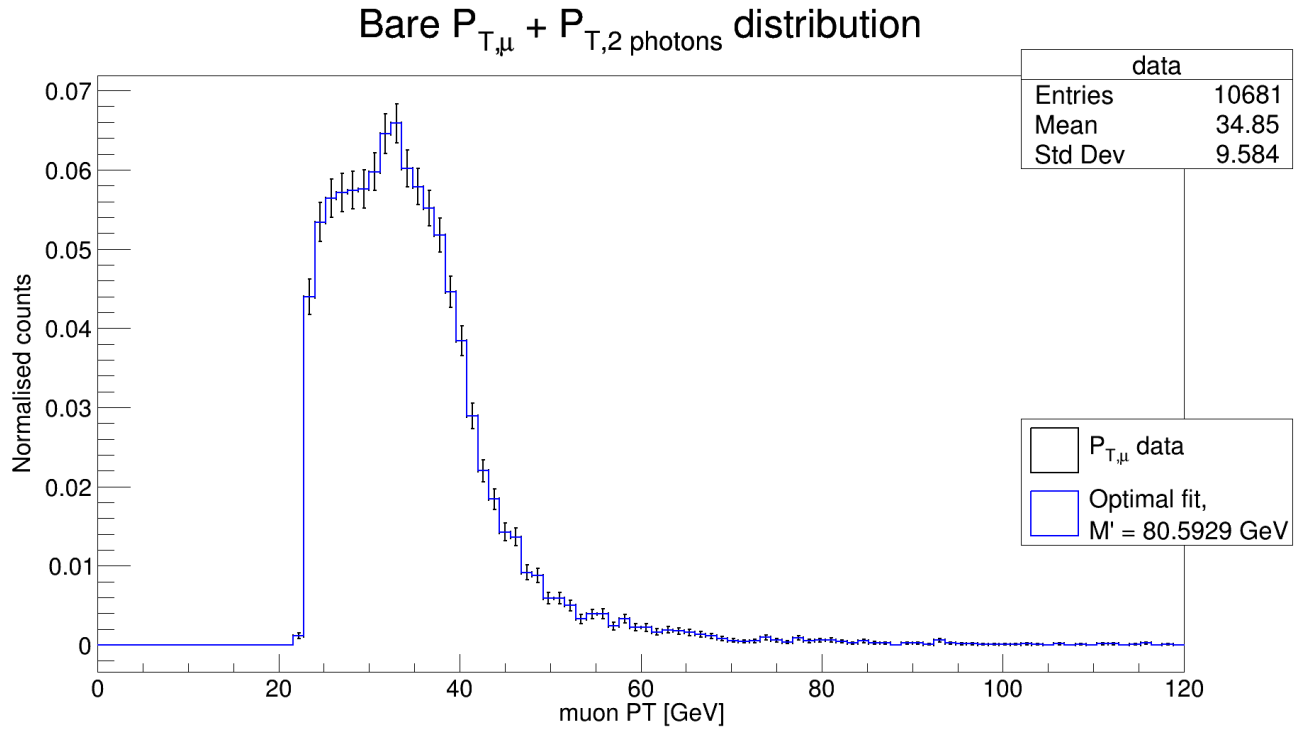


Figure 3: Data and optimum fit with $\chi^2/DoF(n_{hist_bins} - parms_fit) = 0.34103050983273975/98$. Used the hypothesis mass of $80.5929 \pm 0.3578 [GeV/c^2]$.

Summary and Metadata

Found optimal masses (χ^2 roots): [80.5929] [GeV/c^2] Uncertainty [GeV/c^2]: 0.3578

mean expected W mass: 80.379 [GeV/c^2],

mean hypothesis masses: [78. 78.5 79. 79.5 80. 80.5 81. 81.5 82.] [GeV/c^2],

mass width: 0.02 [GeV/c^2],

chi_square value of hypothesis fit: 129.87218465444911

Absolute path to figure: /home/physics/phuxdp/Desktop/PX402 Physics Project/WBosonProject/T2W7/6.1

Next lines are the data of the shown histograms (if needed):

All quantities: 80.379, [78. 78.5 79. 79.5 80. 80.5 81. 81.5 82.], 20, 129.87218465444911

X_energ_vls = [0.6, 1.7999999999999998, 3.0, 4.199999999999999, 5.4, 6.6, 7.8, 9.0, 10.2, 11.399999999999999, 12.6, 13.799999999999999, 15.0, 16.2, 17.4, 18.6, 19.799999999999997, 21.0, 22.2, 23.4, 24.6, 25.799999999999997, 27.0, 28.199999999999996, 29.4, 30.6, 31.799999999999999, 33.0, 34.2, 35.4, 36.599999999999994, 37.8, 39.0, 40.2, 41.4, 42.599999999999994, 43.8, 45.0, 46.2, 47.4, 48.599999999999994, 49.8, 51.0, 52.2, 53.4, 54.599999999999994, 55.8, 57.0, 58.199999999999996, 59.4, 60.599999999999994, 61.8, 63.0, 64.199999999999999, 65.4, 66.6, 67.8, 69.0, 70.199999999999999, 71.4, 72.6, 73.8, 75.0, 76.199999999999999, 77.4, 78.6, 79.8, 81.0, 82.199999999999999, 83.4, 84.6, 85.8, 87.0, 88.199999999999999, 89.4, 90.6, 91.8, 93.0, 94.199999999999999, 95.4, 96.6, 97.8, 99.0, 100.199999999999999, 101.4, 102.6, 103.8, 105.0, 106.199999999999999, 107.4, 108.6, 109.8, 111.0, 112.199999999999999, 113.4, 114.6, 115.799999999999998, 117.0, 118.199999999999999, 119.4]

Y_data_bin_cnts = [0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 14.099061012268066, 525.8292846679688, 638.6599731445312, 674.6920166015625, 683.287170410, 686.7046508789062, 688.6676025390625, 714.7899169921875, 771.9392700195312, 787.6864624023, 719.6143188476562, 692.2353515625, 659.966796875, 618.6576538085938, 533.4454345703125, 459.555908203125, 345.6645202636719, 263.1078796386719, 220.40748596191406, 170.8577728271, 163.3418731689453, 109.8066635131836, 104.95861053466797, 70.5670394897461, 70.55274963378, 59.68303298950195, 39.24943923950195, 46.95916748046875, 47.18356704711914, 28.71502685546, 39.468868255615234, 27.27216339111328, 26.383121490478516, 19.723323822021484, 22.66478538, 21.209047317504883, 19.11163902282715, 16.568761825561523, 13.815780639648438, 9.551673889, 6.675883769989014, 5.27090311050415, 6.185239791870117, 11.484127044677734, 7.323295116424, 4.229836463928223, 10.51165771484375, 6.555027008056641, 7.266375541687012, 7.499501228332, 5.257692813873291, 3.120767116546631, 6.1444926261901855, 3.23539137840271, 3.083141326904, 0.0, 3.1139793395996094, 3.0202407836914062, 1.0018419027328491, 7.269998550415039, 3.012941837310791, 2.03045654296875, 2.0875535011291504, 1.0157724618911743, 1.00009477138, 1.0694698095321655, 1.1989566087722778, 2.017871379852295, 1.0615507364273071, 0.0, 2.012909412384033, 0.0, 1.011629581451416, 0.0, 2.0317764282226562, 2.022861957550049, 0.0, 1.0039684772491455, 3.0555100440979004, 0.0, 1.0099481344223022, 0.0]

Y_model_bin_cnts = [0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 8.81794548034668, 506.08734130859375, 633.58251953125, 644.0139770507812, 692.9703979492188, 682.4111328125, 670.55517578125, 672.1305541992188, 680.8438110351562, 692.8426513671875, 712.4075927734375, 690.9874267578125, 621.7156982421875, 622.6232299804, 551.6856689453125, 407.8310852050781, 341.4911193847656, 254.46588134765625, 187.243011474, 167.33023071289062, 118.59236145019531, 109.09888458251953, 95.8675765991211, 70.150451660, 51.2608528137207, 68.64691162109375, 47.34823989868164, 49.01103591918945, 26.928443908691, 26.05727767944336, 23.325544357299805, 27.967700958251953, 20.30891227722168, 22.214815139, 25.192184448242188, 25.811922073364258, 13.941347122192383, 18.74399185180664, 10.19888782, 9.322525978088379, 5.891482353210449, 6.873595237731934, 8.997750282287598, 8.926541328430, 11.008454322814941, 8.216903686523438, 4.887503147125244, 10.215641021728516, 4.9818511009, 3.1805419921875, 6.680446624755859, 4.014380931854248, 2.075854778289795, 3.11317777633667, 4.103855133056641, 3.9712929725646973, 3.1251885890960693, 2.104428291320801, 2.9652044773, 0.9621815085411072, 1.0343888998031616, 3.0618884563446045, 0.0, 3.9566783905029297,

0.9977262616157532, 0.9609740376472473, 1.0396075248718262, 0.972561776638031, 2.097050428
0.0, 0.0, 1.028462290763855, 0.0, 0.9769452214241028, 1.0082573890686035, 0.0, 0.0, 0.0,
0.0, 0.9982481002807617, 2.2651419639587402, 0.0]