

Angular distribution of background

Marcin Chrzęszcz^{1,2}, Nicola Serra¹



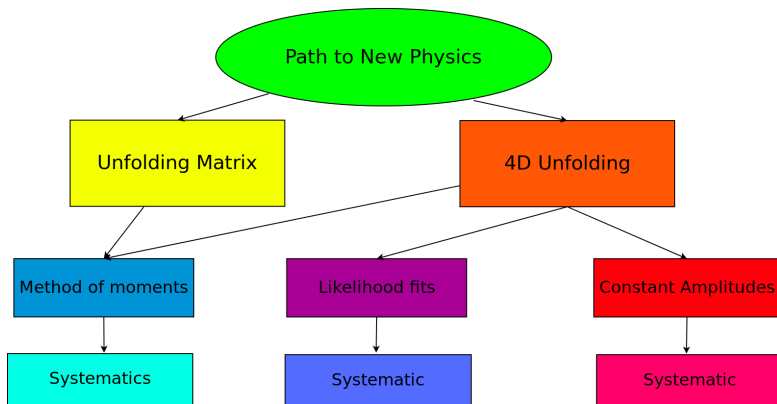
University of
Zurich^{UZH}



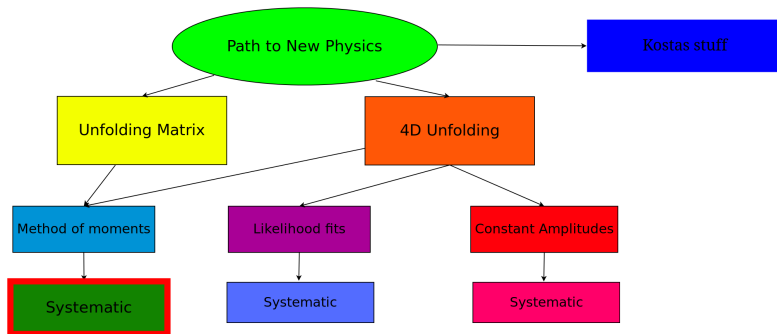
¹ University of Zurich,
² Institute of Nuclear Physics, Krakow

January 1, 2015

Quo vadis $B^0 \rightarrow K^* \mu\mu$?

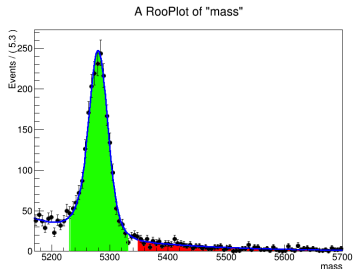


Quo vadis $B^0 \rightarrow K^* \mu\mu$?



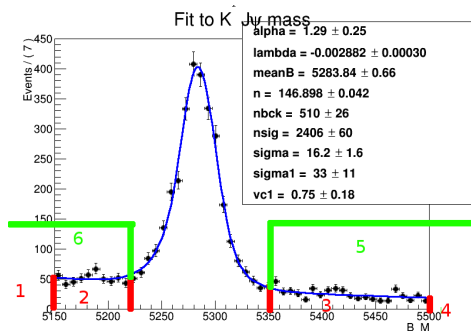
Assumptions

- Each method assumes that background angular distribution is the same in the red and green region.
- This might not be necessary the true.
- Let's test this using method of moments.



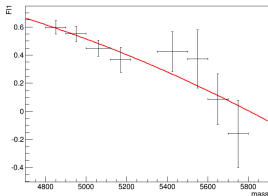
Studied background region

- Divided mass regions in different q^2 bins.
- To each calculate the S_x components and see if there is a clear trend.
- Try fitting and seeing the impact in the signal window.

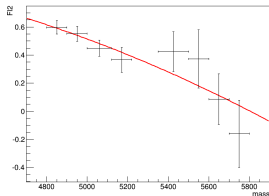


Studied background region

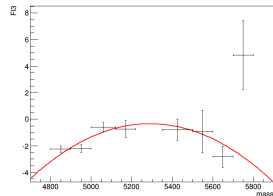
Q[0_1-0_98]_F1



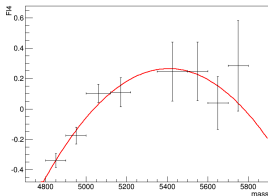
Q[0_1-0_98]_F2



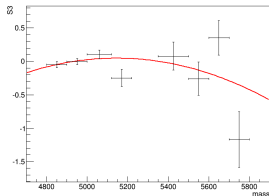
Q[0_1-0_98]_F3



Q[0_1-0_98]_F4



Q[0_1-0_98]_S3

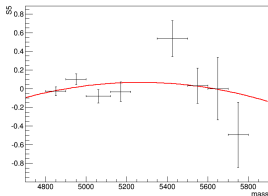


Q[0_1-0_98]_S4

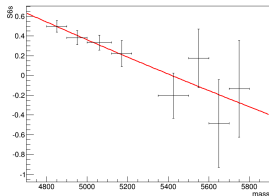


Studied background region

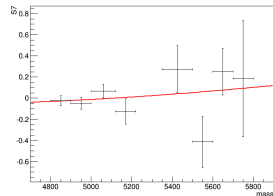
Q[0_1-0_98]_S5



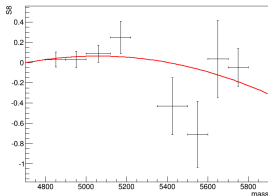
Q[0_1-0_98]_S6s



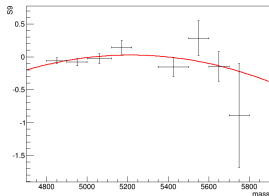
Q[0_1-0_98]_S7



Q[0_1-0_98]_S8

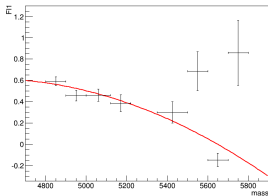


Q[0_1-0_98]_S9

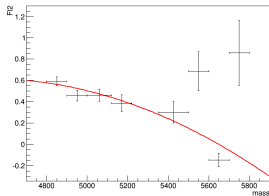


Studied background region

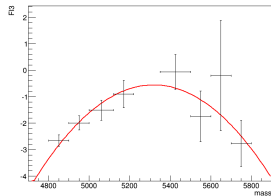
Q[1_1-2]_F1



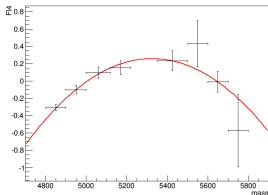
Q[1_1-2]_F2



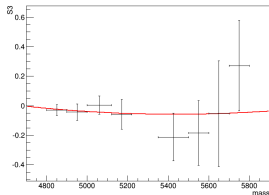
Q[1_1-2]_F3



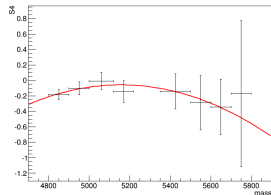
Q[1_1-2]_F4



Q[1_1-2]_S3

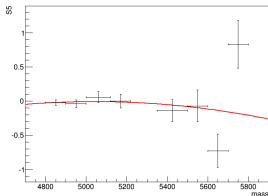


Q[1_1-2]_S4

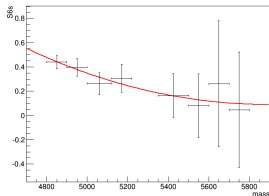


Studied background region

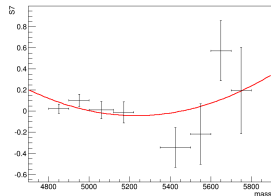
Q[1_1-2]_S5



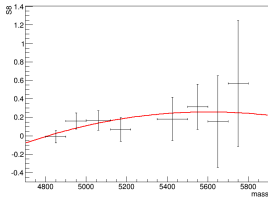
Q[1_1-2]_S6s



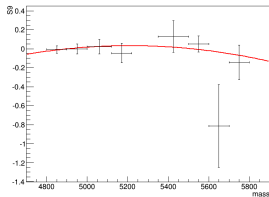
Q[1_1-2]_S7



Q[1_1-2]_S8

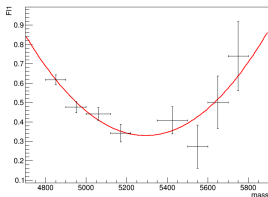


Q[1_1-2]_S9

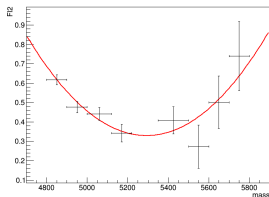


Studied background region

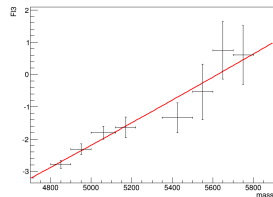
Q[2-4]_F1



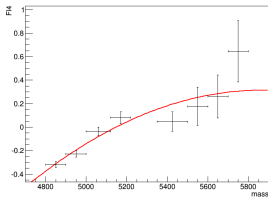
Q[2-4]_F2



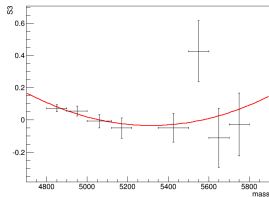
Q[2-4]_F3



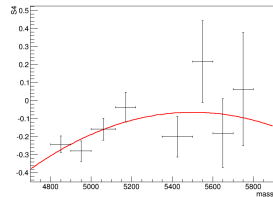
Q[2-4]_F4



Q[2-4]_S3

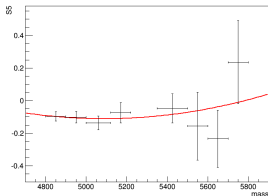


Q[2-4]_S4

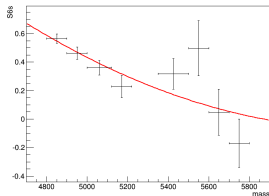


Studied background region

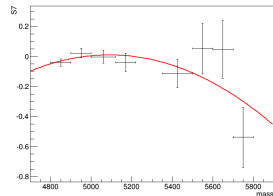
Q[2-4]_S5



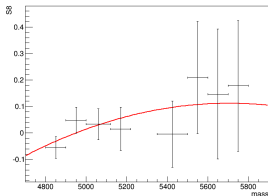
Q[2-4]_S6s



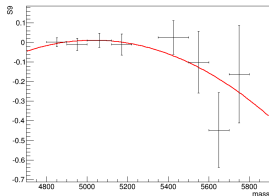
Q[2-4]_S7



Q[2-4]_S8

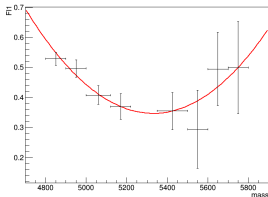


Q[2-4]_S9

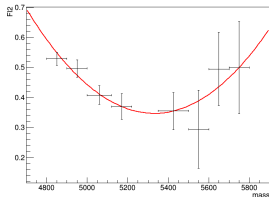


Studied background region

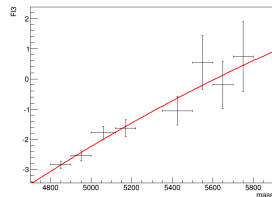
Q[4-6]_F1



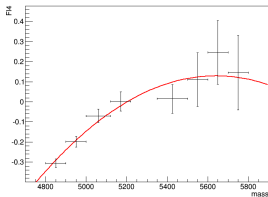
Q[4-6]_F2



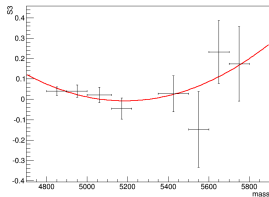
Q[4-6]_F3



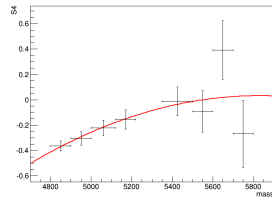
Q[4-6]_F4



Q[4-6]_S3

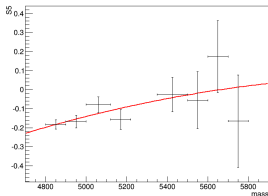


Q[4-6]_S4

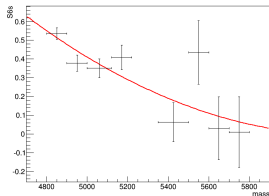


Studied background region

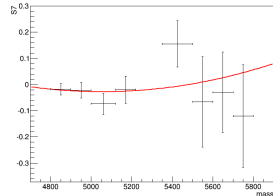
Q[4-6]_S5



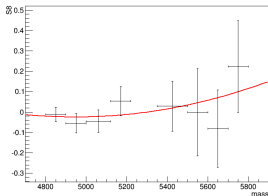
Q[4-6]_S6s



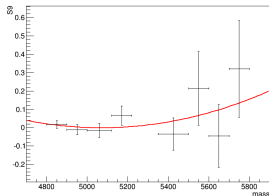
Q[4-6]_S7



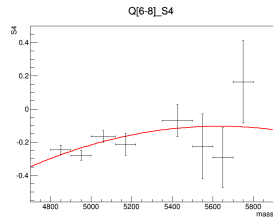
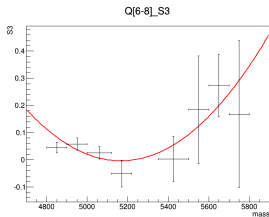
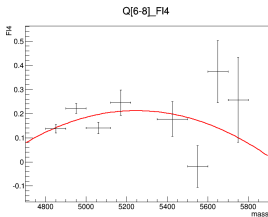
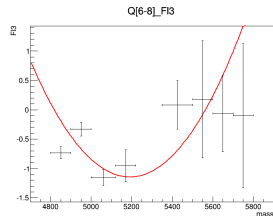
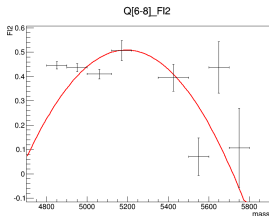
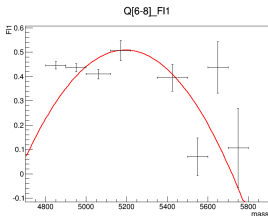
Q[4-6]_S8



Q[4-6]_S9

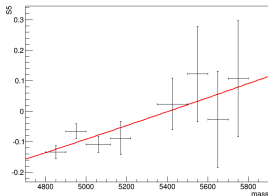


Studied background region

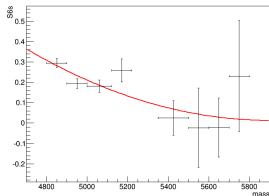


Studied background region

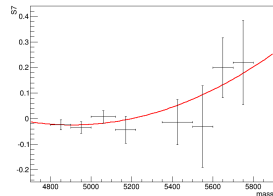
Q[6-8]_S5



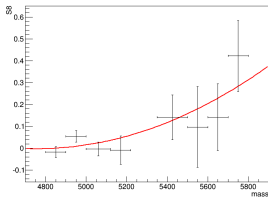
Q[6-8]_S6s



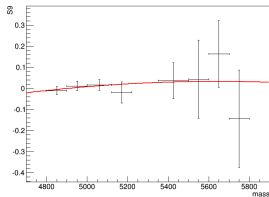
Q[6-8]_S7



Q[6-8]_S8

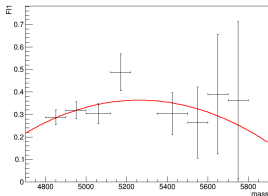


Q[6-8]_S9

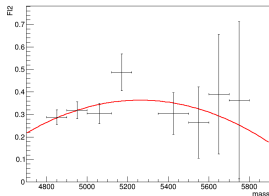


Studied background region

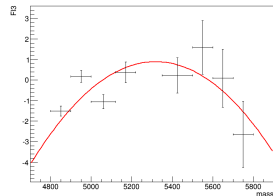
Q[11-11_75]_F1



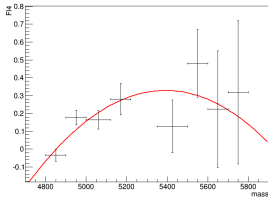
Q[11-11_75]_F2



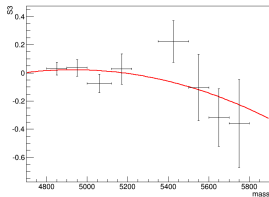
Q[11-11_75]_F3



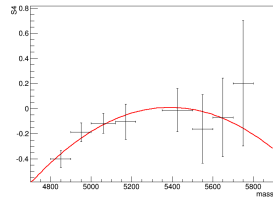
Q[11-11_75]_F4



Q[11-11_75]_S3

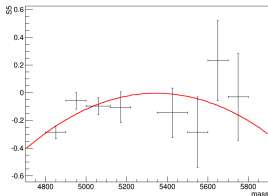


Q[11-11_75]_S4

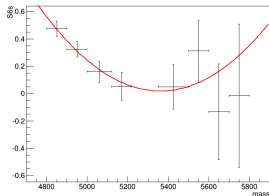


Studied background region

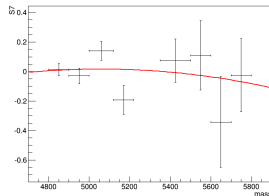
Q[11-11_75]_S5



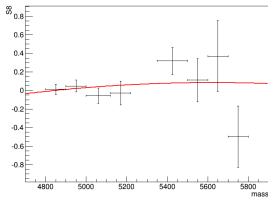
Q[11-11_75]_S6s



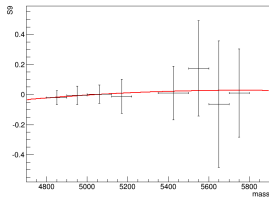
Q[11-11_75]_S7



Q[11-11_75]_S8

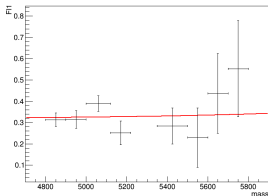


Q[11-11_75]_S9

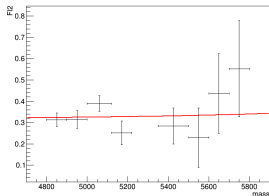


Studied background region

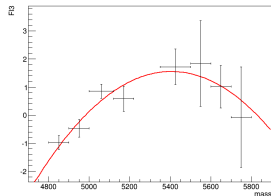
Q[11_75-12_5]_F1



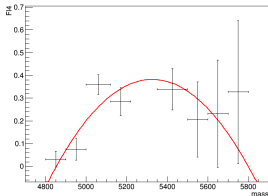
Q[11_75-12_5]_F2



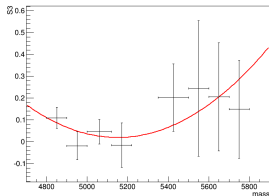
Q[11_75-12_5]_F3



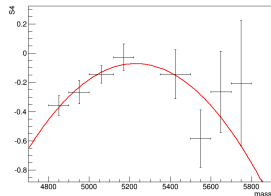
Q[11_75-12_5]_F4



Q[11_75-12_5]_S3

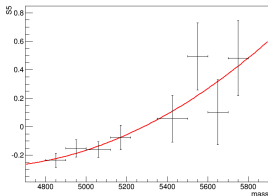


Q[11_75-12_5]_S4

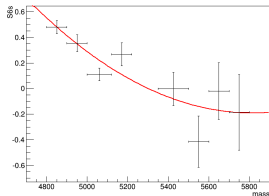


Studied background region

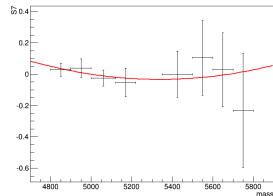
Q[11_75-12_5]_S5



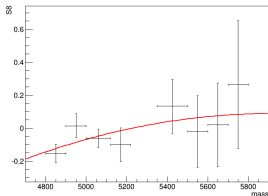
Q[11_75-12_5]_S6s



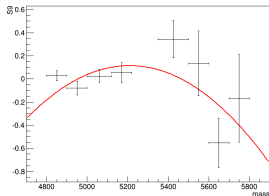
Q[11_75-12_5]_S7



Q[11_75-12_5]_S8

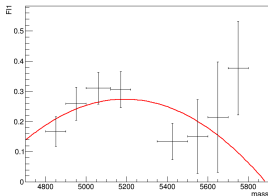


Q[11_75-12_5]_S9

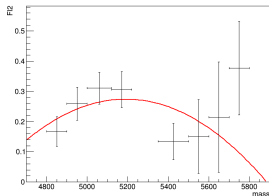


Studied background region

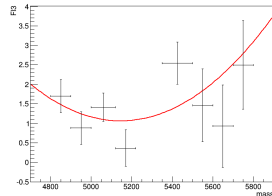
Q[15-17]_F1



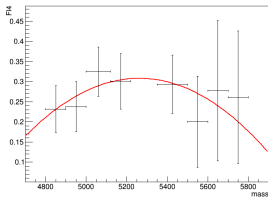
Q[15-17]_F2



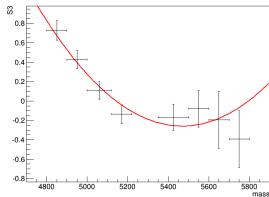
Q[15-17]_F3



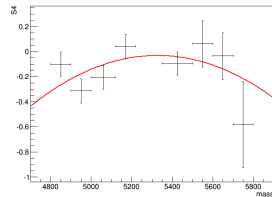
Q[15-17]_F4



Q[15-17]_S3

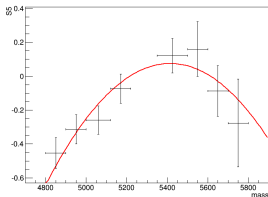


Q[15-17]_S4

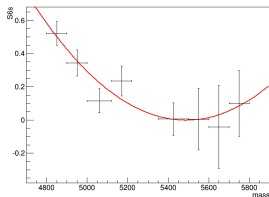


Studied background region

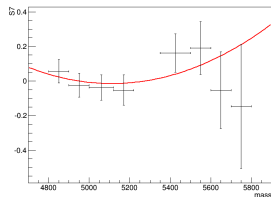
Q[15-17]_S5



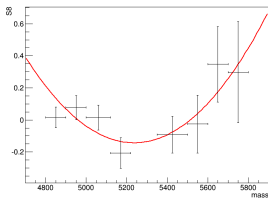
Q[15-17]_S6s



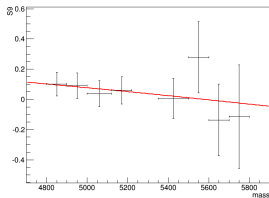
Q[15-17]_S7



Q[15-17]_S8

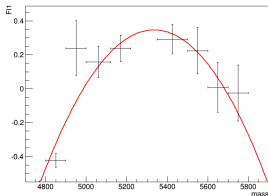


Q[15-17]_S9

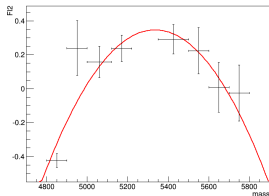


Studied background region

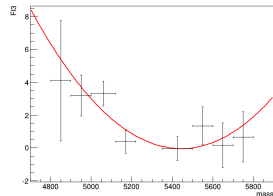
Q[17-19]_F1



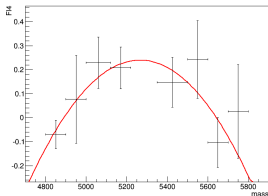
Q[17-19]_F2



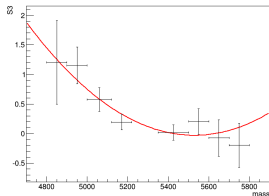
Q[17-19]_F3



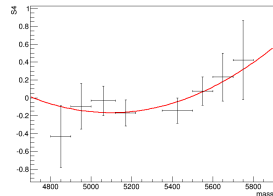
Q[17-19]_F4



Q[17-19]_S3



Q[17-19]_S4



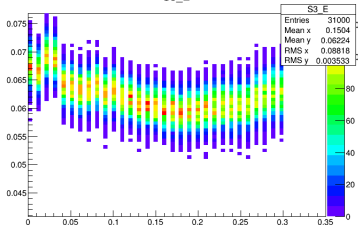
Conclusion

- There is small dependence on background and mass.
- For MM easy to assign systematic to it.
- Fits need some more thinking.

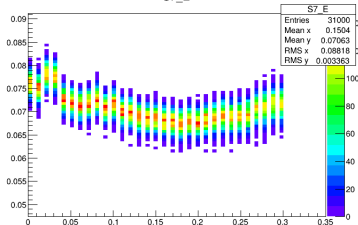


Thing that Kostas just reminded me

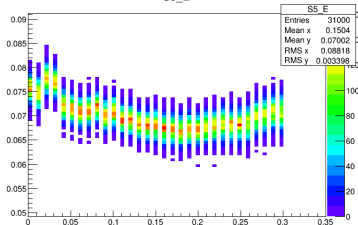
S3_E



S7_E



S5_E



S9_E

