Cross checks

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University of Zurich[UZH]

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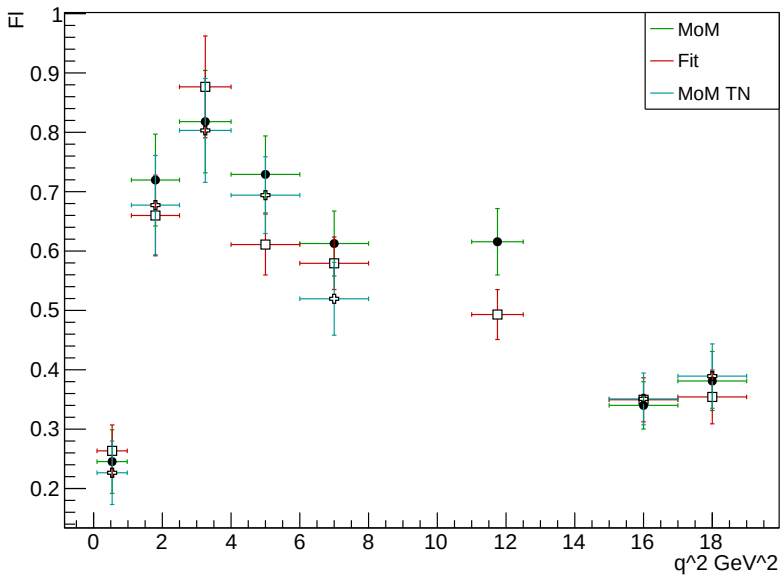
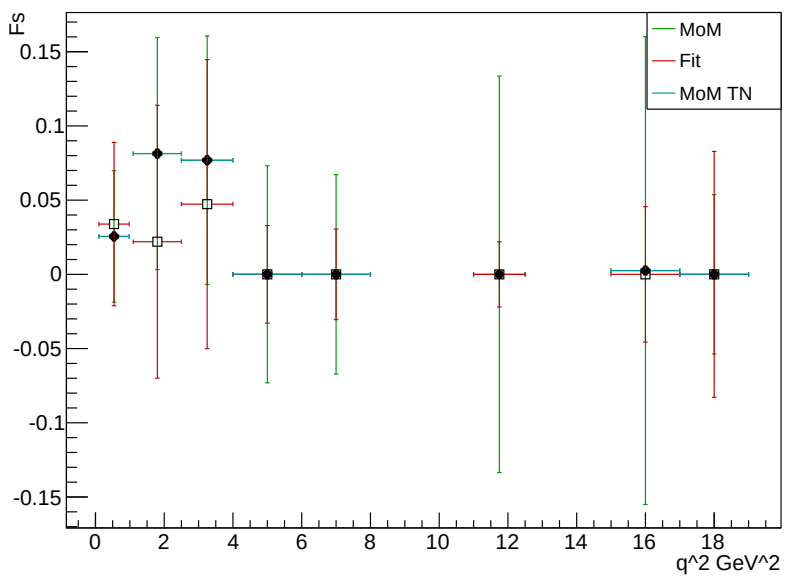
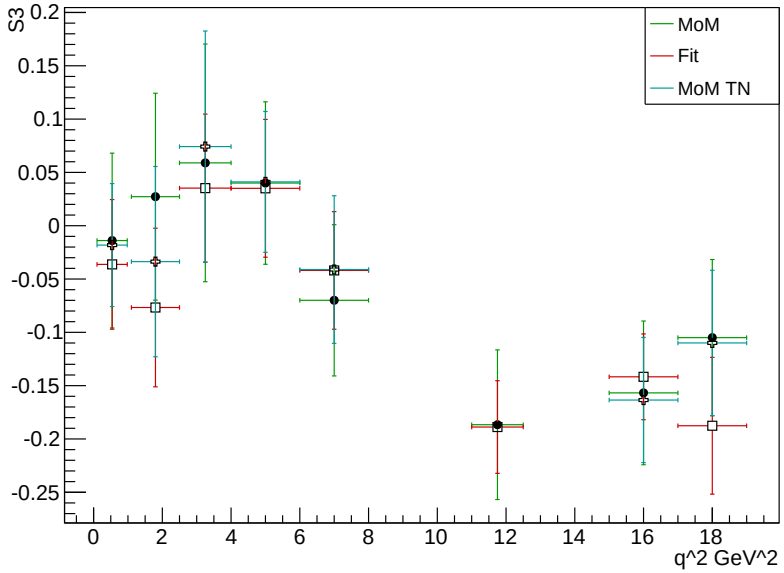
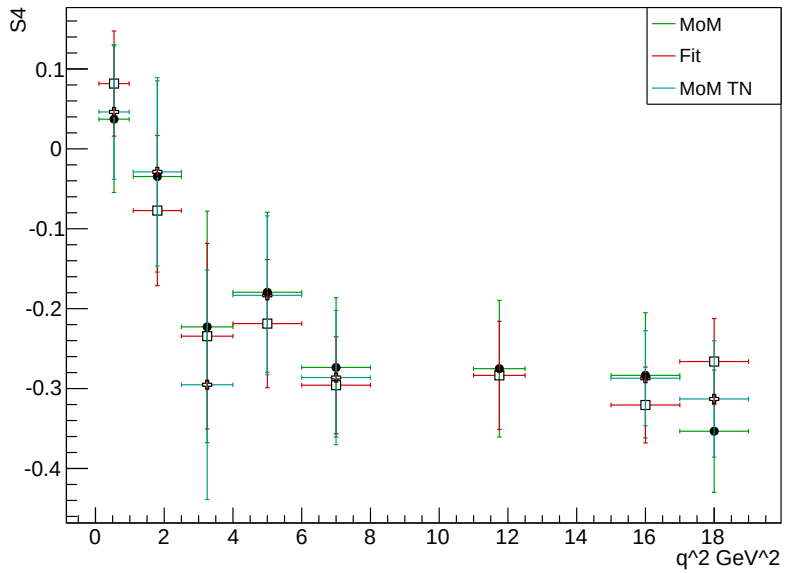
Comparison MoM with LL fit









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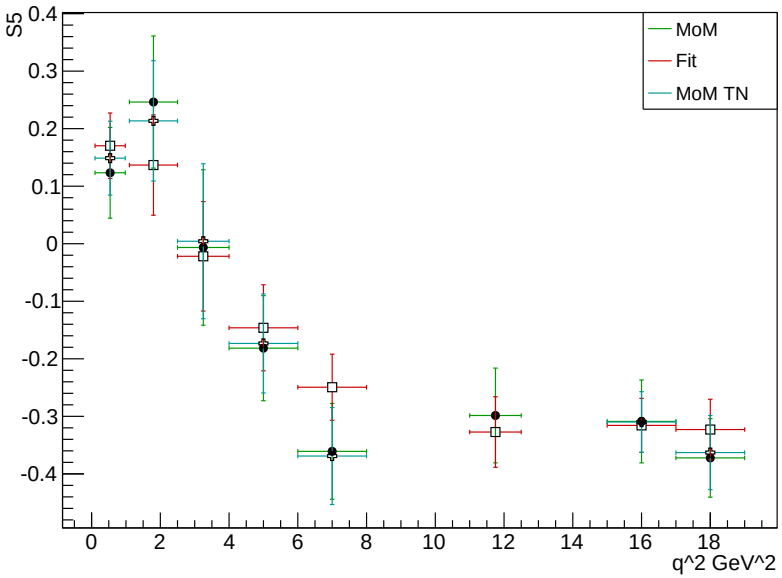

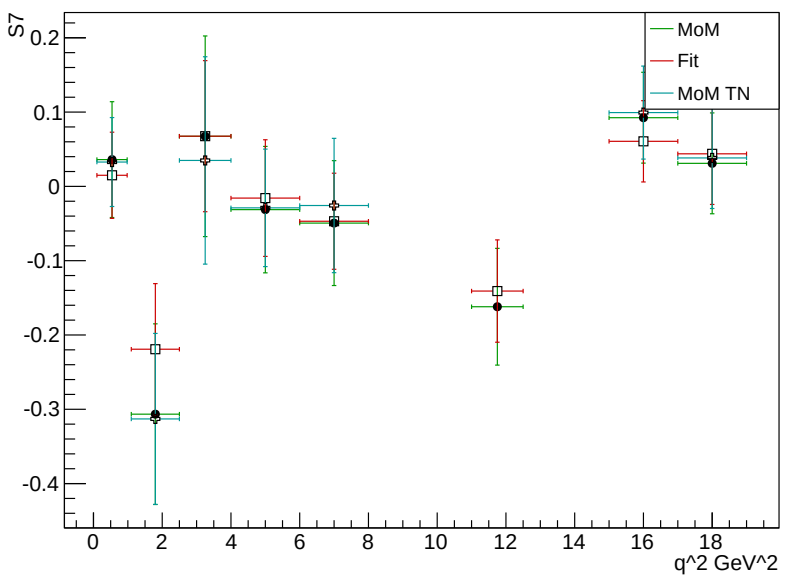

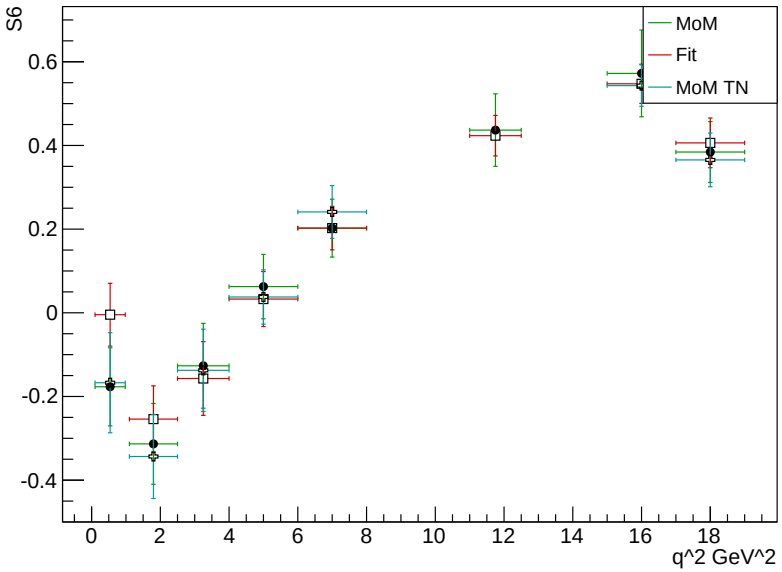

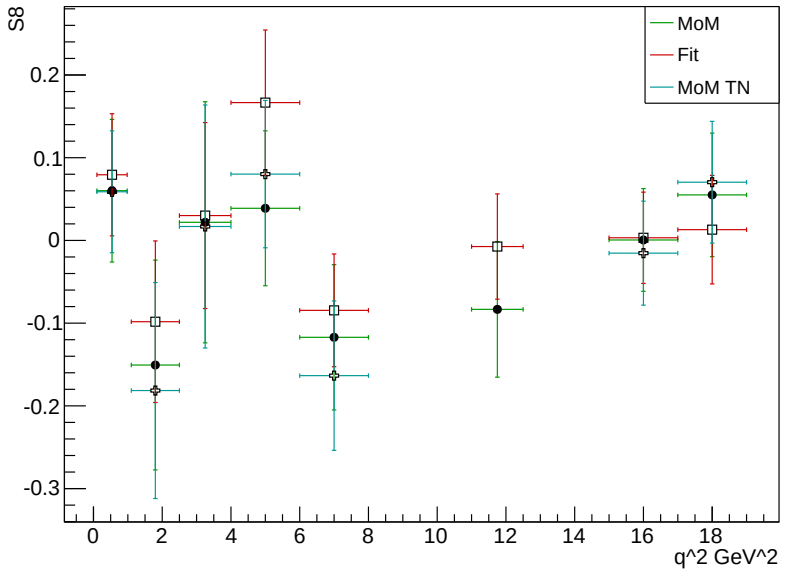

of

Expected differences, MoM vs fit

- We checked this already but as number of sigma is a bit to large for me.
- Let me put once again all the numbers I have in once place.
- Here Signal only, WITH acceptance.

	absolute expected difference at 68% CL							
$q^2[GeV^2/c^4]$	F_l	S_3	S_4	S_5	S_6	S_7	S_8	S_9
0.1 – 0.98	0.035	0.021	0.044	0.028	0.073	0.025	0.038	0.062
1.1 – 2.5	0.062	0.065	0.082	0.061	0.073	0.065	0.084	0.062
2.5 – 4.0	0.062	0.067	0.085	0.077	0.065	0.072	0.080	0.042
4.0 – 6.0	0.043	0.044	0.059	0.056	0.027	0.052	0.054	0.038
6.0 – 8.0	0.038	0.042	0.056	0.053	0.028	0.045	0.051	0.027
15.0 – 17.0	0.027	0.044	0.051	0.042	0.032	0.034	0.045	0.034
17.0 – 19.0	0.034	0.059	0.066	0.055	0.044	0.043	0.056	0.049

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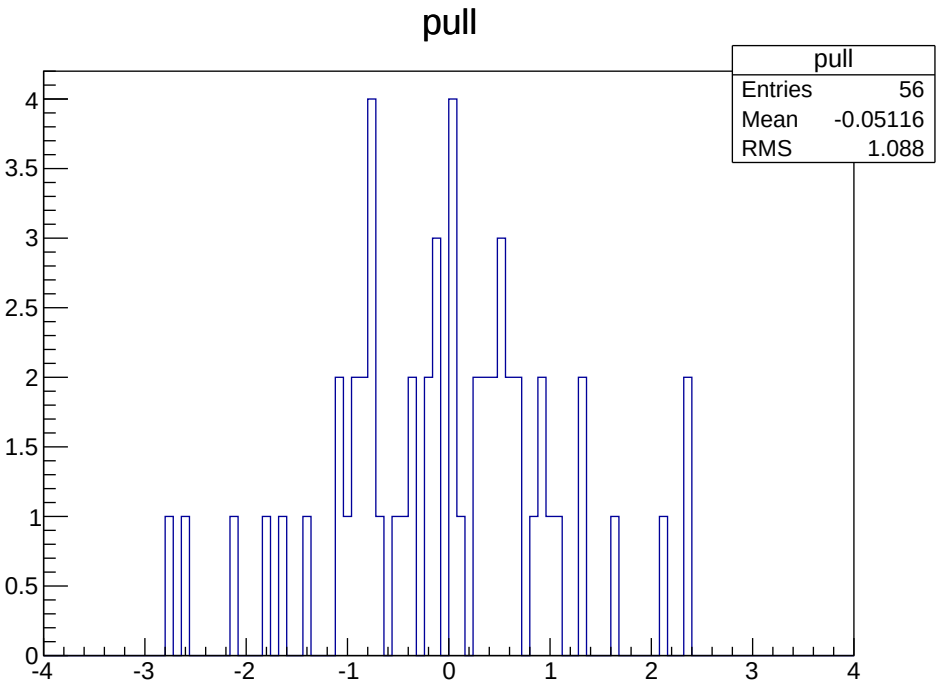
Pull distribution

- Take the observed difference($S_x^{MoM} - S_x^{Fit}$) and divide by the expected difference from table above.



- Important note: The fit I do is weighted, but the pull was obtained using Christoph fit which is unweighed, aka we are comparing apples to oranges here.
- Now repeat the exercise with my own fit weighted fit.

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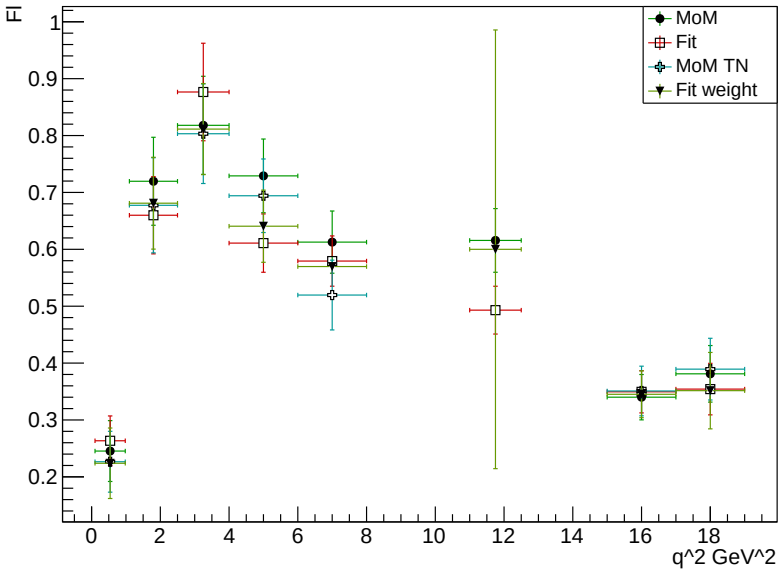
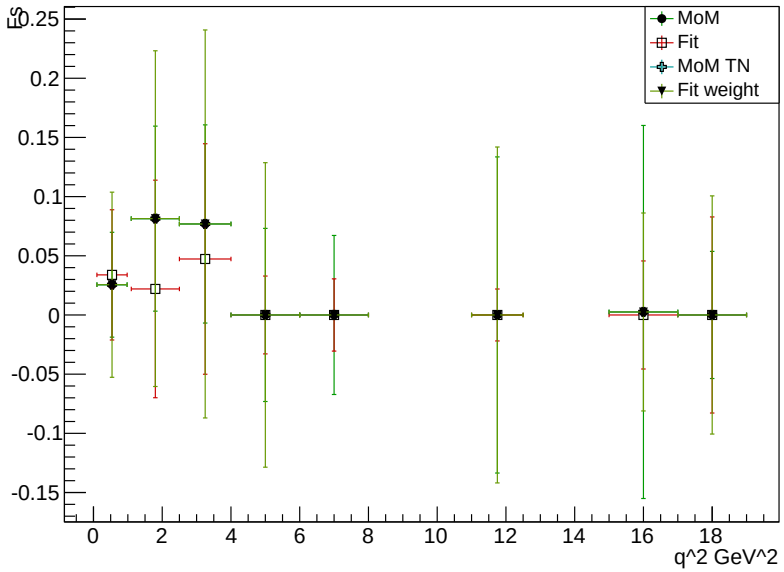
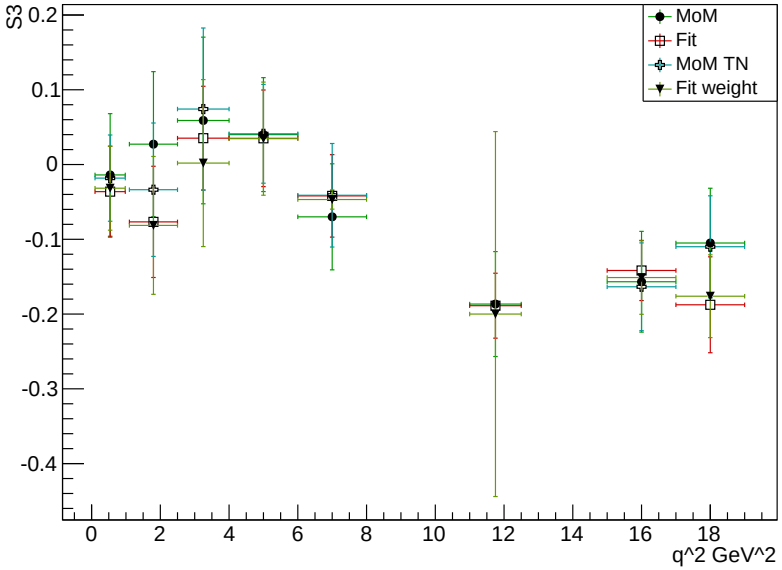
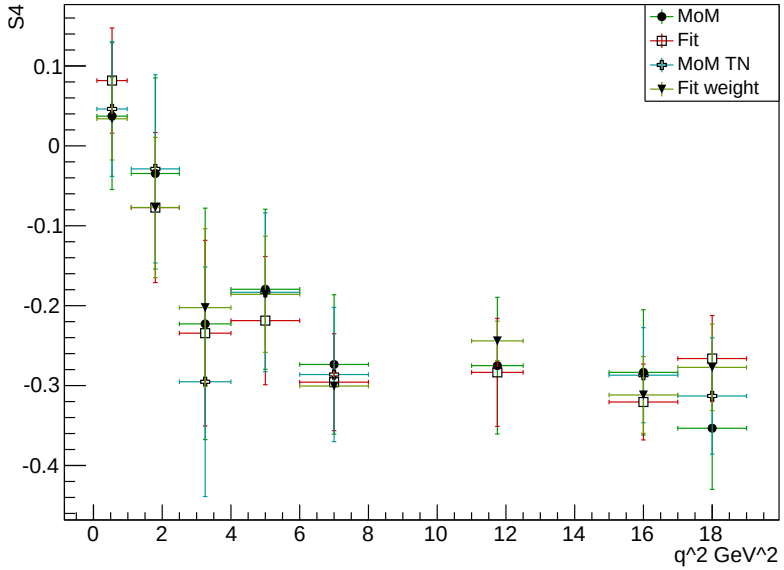
Comparison MoM with LL fit









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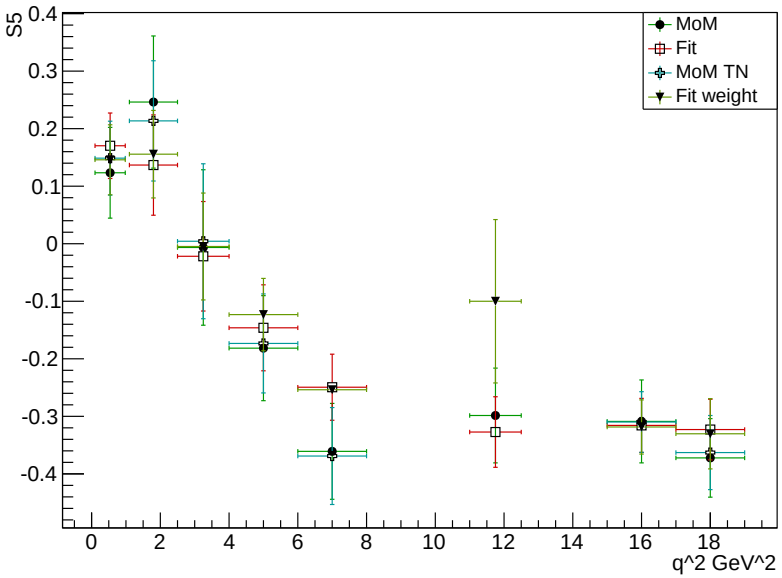
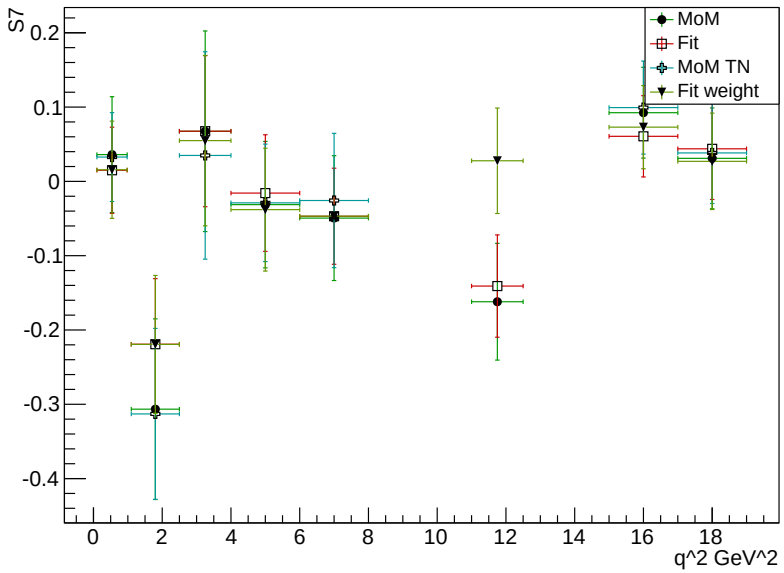
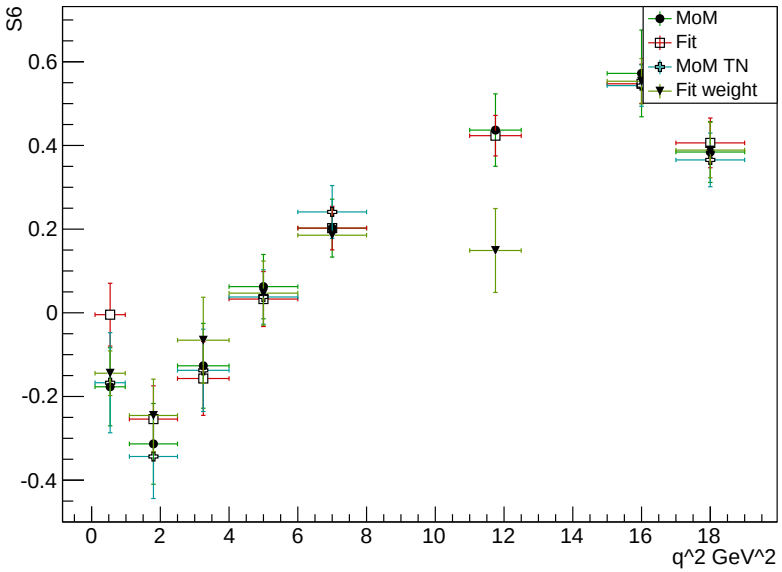
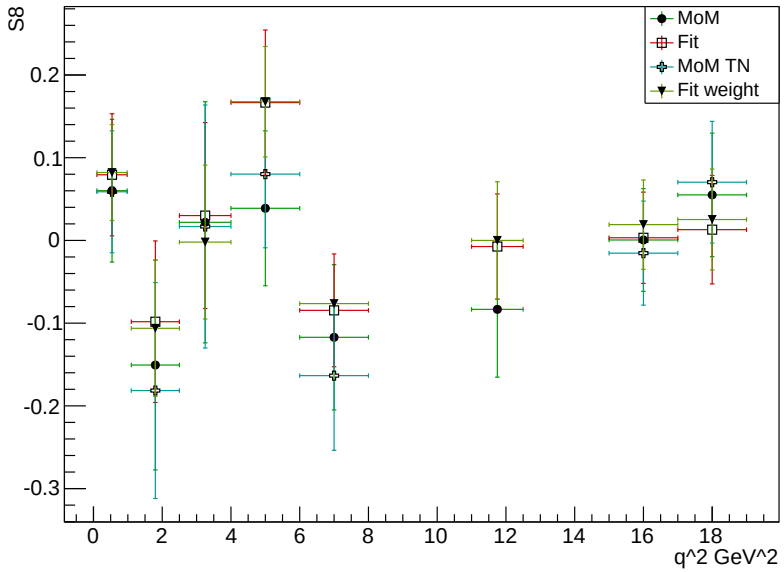
Comparison MoM with LL fit









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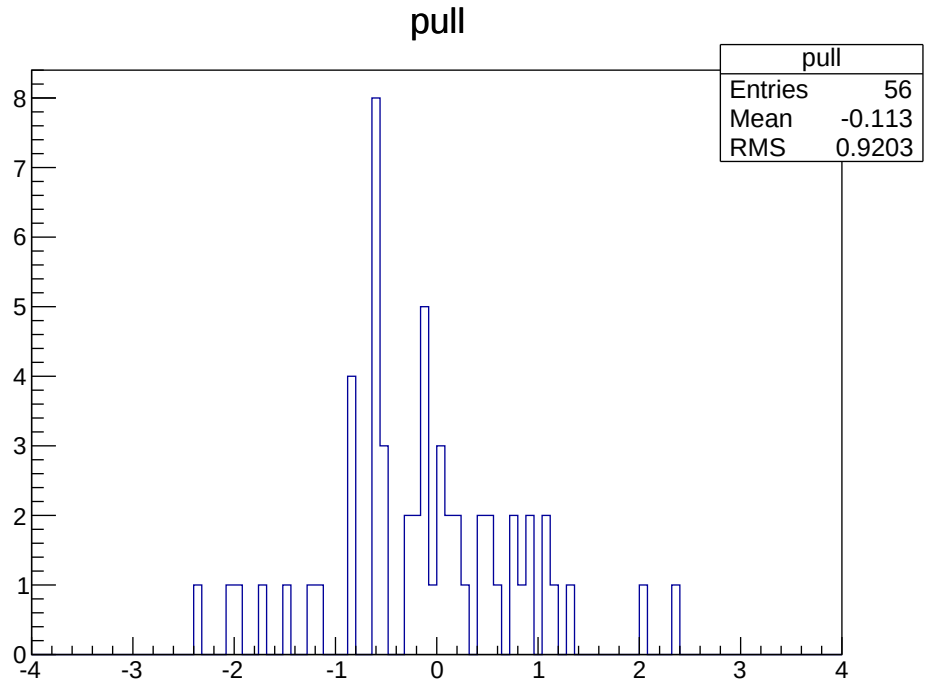

- Now oranges to oranges.

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BACKUP

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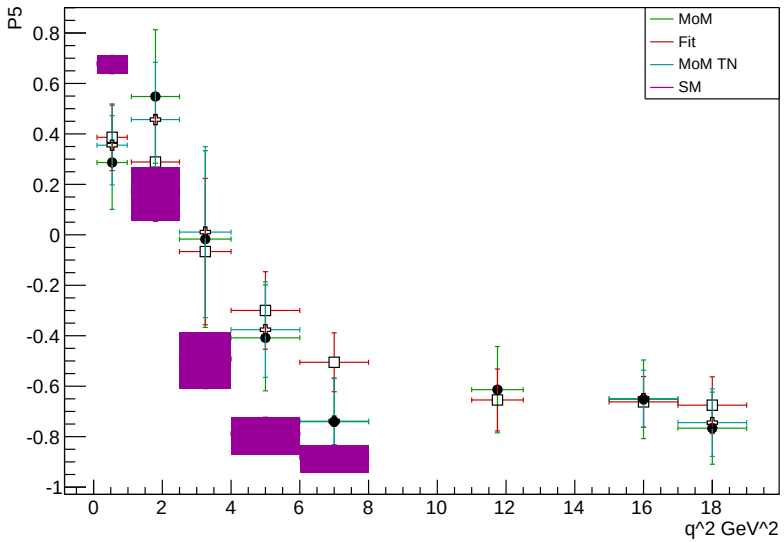
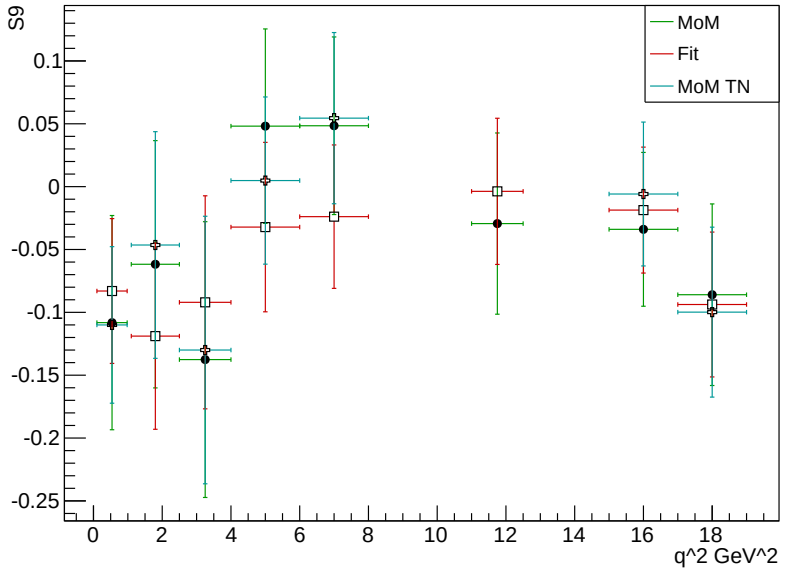
Comparison MoM with LL fit





- My personal opinion: Despite what is expected the left plot scares the hell out of me!

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Expected differences, MoM vs fit

- We checked this already but as number of sigma is a bit to large for me.
- Let me put once again all the numbers I have in once place.
- Here Signal only, no acceptance.

	absolute expected difference at 68% CL							
$q^2[GeV^2/c^4]$	F_l	S_3	S_4	S_5	S_6	S_7	S_8	S_9
0.1 – 0.98	0.015	0.014	0.023	0.014	0.013	0.012	0.019	0.021
1.1 – 2.5	0.021	0.025	0.026	0.024	0.015	0.024	0.025	0.020
2.5 – 4.0	0.020	0.022	0.024	0.025	0.013	0.023	0.024	0.016
4.0 – 6.0	0.016	0.017	0.021	0.020	0.010	0.019	0.019	0.015
6.0 – 8.0	0.015	0.017	0.021	0.018	0.011	0.016	0.018	0.015
15.0 – 17.0	0.015	0.022	0.025	0.018	0.017	0.014	0.021	0.018
17.0 – 19.0	0.018	0.026	0.030	0.022	0.021	0.018	0.025	0.024

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Expected differences, MoM vs fit

	observed difference in terms of sigmas							
$q^2[GeV^2/c^4]$	F_l	S_3	S_4	S_5	S_6	S_7	S_8	S_9
0.1 − 0.98	−0.618	−0.827	−0.074	0.794	0.447	−0.807	0.581	0.2374
1.1 − 2.5	−0.624	−1.687	−0.518	−1.4854	0.932	1.334	0.5260	−0.632
2.5 − 4.0	−0.106	−0.842	0.240	0.0223	0.935	−0.174	−0.296	1.098
4.0 − 6.0	−2.063	−0.1230	−0.105	1.0441	−0.583	−0.129	2.394	−1.921
6.0 − 8.0	−1.1236	0.5489	−0.4824	2.001	−0.628	0.059	0.800	−2.329
15.0 − 17.0	0.1852	0.128	−0.560	−0.230	−0.573	−0.572	0.411	0.062
17.0 − 19.0	−0.859	−1.215	1.148	0.757	0.105	−0.0927	−0.529	−0.304

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