

BES3 数据初步分析

- 拟合函数

$$\chi^2 = \sum_i \frac{[f_c \tilde{R}_{\text{exp}}(W_i) - \tilde{R}_{\text{the}}(W_i)]^2}{[f_c \Delta \tilde{R}_{\text{exp}}^{(i)}]^2} + \frac{(f_c - 1)^2}{\sigma_c^2},$$

$$\tilde{R}_{\text{exp}} = \frac{N_{\text{had}}^{\text{obs}} - N_{\text{bg}}}{\sigma_{\mu\mu}^0 L \epsilon_{\text{trg}} \epsilon_{\text{had}}}, \quad \tilde{R}_{\text{the}} = (1 + \delta_{\text{obs}}) R_{\text{the}}, \quad R_{\text{the}} = R_{\text{con}} + R_{\text{res}}.$$

- f_c 标度因子 σ_c^2 公共误差或关联误差

初始参数

PARAMETER DEFINITIONS:

NO.	NAME	VALUE	STEP SIZE	LIMITS
1	'WE3770	0.26000	0.10000E-01	0.0000 5.0000
2	'M3770	3769.9	0.10000	3750.0 3785.0
3	'W3770	23.600	0.10000	0.0000 100.00
4	'WE4040	1.3000	0.10000E-01	0.0000 10.000
5	'M4040	4040.0	0.10000	4000.0 4080.0
6	'W4040	52.000	0.10000	0.0000 200.00
7	'WE4160	0.77000	0.10000E-01	0.0000 10.000
8	'M4160	4159.0	0.10000	4120.0 4200.0
9	'W4160	78.000	0.10000	0.0000 250.00
10	'WE4415	0.47000	0.10000E-01	0.0000 10.000
11	'M4415	4415.0	0.10000	4375.0 4430.0
12	'W4415	43.000	0.10000	0.0000 250.00
13	'coeff1	2.1000	0.10000E-01	1.8000 2.5000
14	'coeff2	0.15000E-02	0.10000E-03	0.0000 0.24000E-02
15	'coeff3	-0.15000E-06	0.10000E-07	-0.10000E-03 0.0000
16	'scale	1.0000	0.10000E-02	0.0000 2.0000
17	'theta1	0.0000	0.10000E-04	no limits
18	'theta2	0.0000	0.10000E-04	no limits
19	'theta3	0.0000	0.10000E-04	no limits

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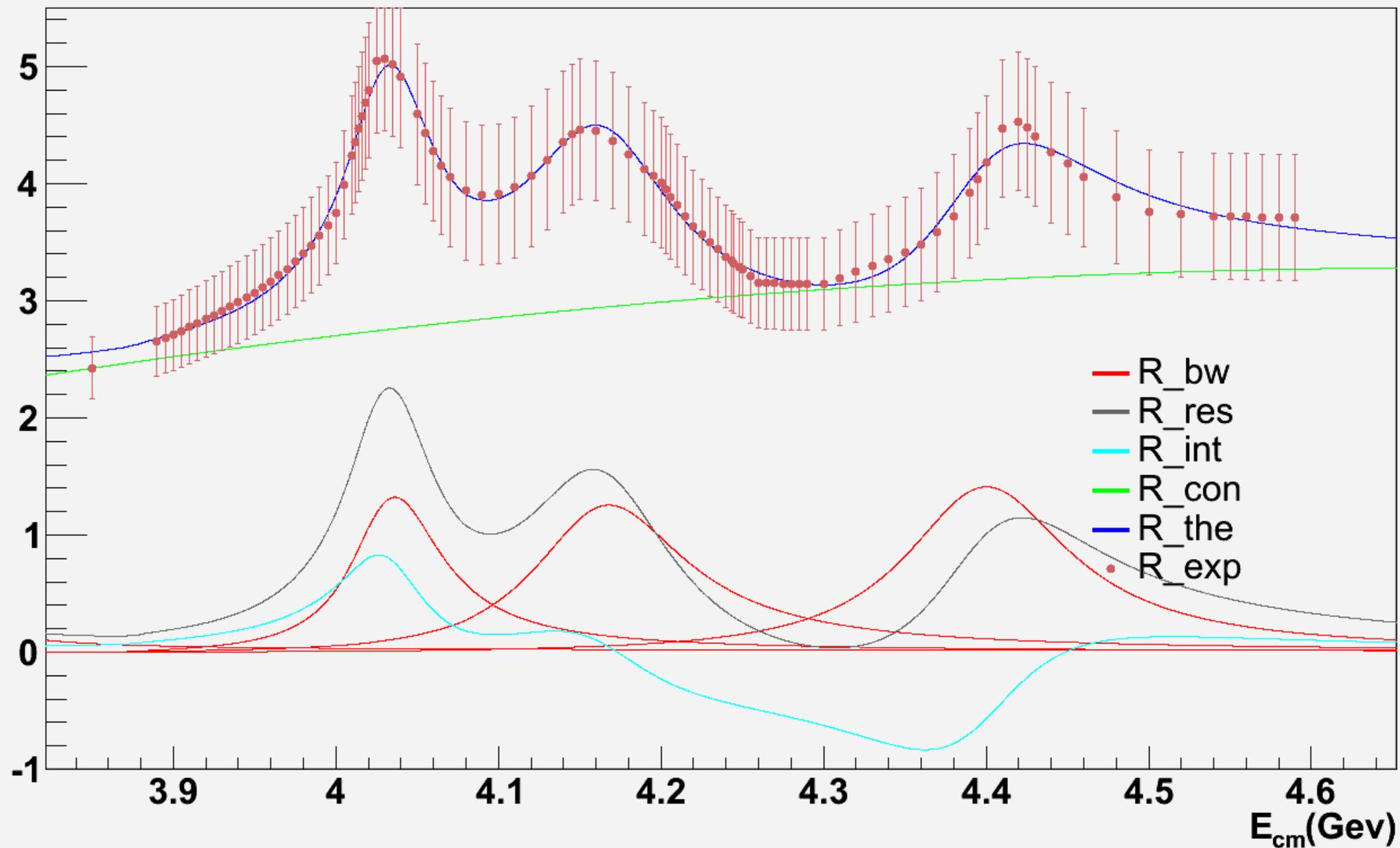
拟合参数

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FCN= 3.105981 FROM MIGRAD STATUS=CONVERGED 1947 CALLS 5858 TOTAL  
EDM= 0.77E-05 STRATEGY=1 ERROR MATRIX UNCERTAINTY= 10.5%
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EXT NO.	PARAMETER NAME	VALUE	ERROR	STEP SIZE	FIRST DERIVATIVE
1	WE3770	0.60900	2.6900	-0.54847E-03	-0.48927E-02
2	M3770	3750.0	34.978	0.15138E-02	-0.74789E-03
3	W3770	100.00	52.473	-0.98246E-03	-0.63571E-04
4	WE4040	0.55154	0.22298	0.38849E-04	-0.10093
5	M4040	4040.4	8.4149	0.13836E-03	-0.89626E-02
6	W4040	71.446	18.190	0.19174E-04	-0.24618E-02
7	WE4160	0.86787	0.58092	0.20247E-03	-0.65808E-01
8	M4160	4174.1	15.873	-0.36781E-03	0.50177E-02
9	W4160	118.11	40.800	-0.16937E-04	0.81159E-03
10	WE4415	1.0354	1.1800	0.56660E-03	-0.35994E-01
11	M4415	4404.1	14.099	0.41971E-05	-0.11451E-02
12	W4415	124.43	56.624	0.17830E-03	0.74311E-02
13	coeff1	2.0914	0.25287	0.26278E-03	-0.26104E-01
14	coeff2	0.24000E-02	0.21074E-02	0.14950E-02	-0.16518E-02
15	coeff3	-0.12082E-05	0.65961E-06	-0.28928E-04	-0.28001
16	scale	0.99966	0.31328E-01	-0.39897E-05	0.27800
17	theta1	1.3020	1.7399	-0.12494E-02	0.14170E-01
18	theta2	2.1261	1.9883	-0.17476E-02	0.10485E-01
19	theta3	0.90610	2.7336	-0.36007E-02	-0.18117E-01

Graph

R



Graph

