1 Nominal correlations.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	-27.78	3.10	18.48	8.36	2.50
ALJ11	174.50 ± 1.60	11.04	7.56	1.20	3.32	1.60
AJT11	174.90 ± 1.40	37.32	9.88	10.45	11.23	1.40
CLL10	175.50 ± 0.90	-6.11	23.90	0.10	1.84	0.90
CLJ10	173.10 ± 0.90	-6.11	23.90	0.10	1.84	0.90
CLL11	173.30 ± 1.10	-76.11	16.00	24.00	22.91	1.10
CMJ11	172.60 ± 0.70	167.76	39.51	47.21	50.49	0.70
Correlations	—	—	-23.86	—	—	—
BLUE mt	173.84 ± 0.44	100.00	100.00	101.55	100.00	0.44

Table 1: BLUE of the combination (χ^2/ndof= 219.60/6). For each input measurement i the following are listed: the central value weight CVW$_i$ or λ_i, the intrinsic information weight IIW$_i$, the marginal information weight MIW$_i$, the relative importance RI$_i$. The intrinsic information weight IIW$_{\text{corr}}$ of correlations is also shown on a separate row.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	1.204	1.204
AJT11 / ALJ10	3.561	3.561
AJT11 / ALJ11	-0.906	-0.906
CLL10 / ALJ10	-0.187	-0.187
CLL10 / ALJ11	0.048	0.048
CLL10 / AJT11	0.141	0.141
CLJ10 / ALJ10	-0.187	-0.187
CLJ10 / ALJ11	0.048	0.048
CLJ10 / AJT11	0.141	0.141
CLJ10 / CLL10	-0.030	-0.030
CLL11 / ALJ10	-2.853	-2.853
CLL11 / ALJ11	0.726	0.726
CLL11 / AJT11	2.146	2.146
CLL11 / CLL10	-0.452	-0.452
CLL11 / CLJ10	-0.452	-0.452
CMJ11 / ALJ10	4.002	4.002
CMJ11 / ALJ11	-1.018	-1.018
CMJ11 / AJT11	-3.010	-3.010
CMJ11 / CLL10	0.634	0.634
CMJ11 / CLJ10	0.634	0.634
CMJ11 / CLL11	9.648	9.648
ErrSrc	13.837	GlobFact 13.837

Table 2: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: nominal correlations). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	3.80	3.32	1.07	1.07	1.31	0.83
ALJ11	3.80	2.56	2.13	0.68	0.68	0.84	0.53
AJT11	3.32	2.13	1.96	0.60	0.60	0.73	0.47
CLL10	1.07	0.68	0.60	0.81	0.77	0.94	0.60
CLJ10	1.07	0.68	0.60	0.77	0.81	0.94	0.60
CLL11	1.31	0.84	0.73	0.94	0.94	1.21	0.73
CMJ11	0.83	0.53	0.47	0.60	0.60	0.73	0.49

Table 3: Full input covariance between measurements (summed over error sources).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	3.80	3.32	1.07	1.07	1.31	0.83
ALJ11	3.80	2.56	2.13	0.68	0.68	0.84	0.53
AJT11	3.32	2.13	1.96	0.60	0.60	0.73	0.47
CLL10	1.07	0.68	0.60	0.81	0.77	0.94	0.60
CLJ10	1.07	0.68	0.60	0.77	0.81	0.94	0.60
CLL11	1.31	0.84	0.73	0.94	0.94	1.21	0.73
CMJ11	0.83	0.53	0.47	0.60	0.60	0.73	0.49

Table 4: Partial input covariance between measurements. Error source #0: bJES.

2 Modified correlations.

2.1 Summary of results.

Combination	BLUE	bJES	χ^2/ndof
Nominal correlations	173.84 ± 0.44	0.44	219.60/6
Minimize by global factor	173.66 ± 0.66	0.66	33.54/6
Minimize by error sources	173.66 ± 0.66	0.66	33.54/6
Minimize by off-diagonal elements	172.64 ± 0.70	0.70	87.90/6
Remove negative CVWs	172.64 ± 0.70	0.70	3.48/1
Onionize	172.66 ± 0.70	0.70	94.69/6
NO correlations	173.56 ± 0.40	0.40	11.01/6

Table 5: Summary table. BLUE's of the combinations performed with nominal and modified correlations.

2.2 Minimize correlations by a global rescaling factor.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	-8.83	6.92	5.10	6.12	2.50
ALJ11	174.50 ± 1.60	4.75	16.89	0.60	3.29	1.60
AJT11	174.90 ± 1.40	13.84	22.06	3.93	9.59	1.40
CLL10	175.50 ± 0.90	13.31	53.37	1.39	9.23	0.90
CLJ10	173.10 ± 0.90	13.31	53.37	1.39	9.23	0.90
CLL11	173.30 ± 1.10	-13.33	35.73	2.08	9.24	1.10
CMJ11	172.60 ± 0.70	76.94	88.23	28.06	53.31	0.70
Correlations	—	—	-176.56	—	—	—
BLUE mt	173.66 ± 0.66	100.00	100.00	42.56	100.00	0.66

Table 6: BLUE of the combination (χ^2/ndof= 33.54/6). For each input measurement i the following are listed: the central value weight CVW_i or λ_i, the intrinsic information weight IIW_i , the marginal information weight MIW_i, the relative importance RI_i. The intrinsic information weight $\mathrm{IIW}_{\mathrm{corr}}$ of correlations is also shown on a separate row.

Parameter name	ParID	Parameter value	$1/I^{nom}$*dI/dX			Fixed or
		ScaleFactor X @MIN	@0	@MIN	@1	Variable
GlobalScaleFact	#0	0.7076 ± 0.8534	-4.6629	∼ 0	13.8369	Variable

Table 7: Normalised Fisher information derivatives $1/I^{nom}$*dI/dX (before and after minimization) and minimization results. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to the corresponding nominal correlation, and all normalized by the information I^{nom} at nominal correlations ("@1"). They are computed at three different values of the scale factors X: for nominal values of all correlations (i.e. when all scale factors are 1: "@1"), for correlations all equal to zero (i.e. when all scale factors are 0: "@0") and for the scale factors minimizing Fisher information ("@MIN"). In the minimization, the scale factors X were varied (between 0 and 1, starting at 1) unless dI/dX@0 == dI/dX@1 == 0. A minimum was found in this minimization.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	0.052	0.052
AJT11 / ALJ10	0.133	0.133
AJT11 / ALJ11	-0.046	-0.046
CLL10 / ALJ10	0.041	0.041
CLL10 / ALJ11	-0.014	-0.014
CLL10 / AJT11	-0.036	-0.036
CLJ10 / ALJ10	0.041	0.041
CLJ10 / ALJ11	-0.014	-0.014
CLJ10 / AJT11	-0.036	-0.036
CLJ10 / CLL10	-0.045	-0.045
CLL11 / ALJ10	-0.050	-0.050
CLL11 / ALJ11	0.017	0.017
CLL11 / AJT11	0.044	0.044
CLL11 / CLL10	0.055	0.055
CLL11 / CLJ10	0.055	0.055
CMJ11 / ALJ10	0.185	0.185
CMJ11 / ALJ11	-0.064	-0.064
CMJ11 / AJT11	-0.162	-0.162
CMJ11 / CLL10	-0.201	-0.201
CMJ11 / CLJ10	-0.201	-0.201
CMJ11 / CLL11	0.246	0.246
ErrSrc	~ 0	GlobFact ~ 0

Table 8: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: correlations in minimization by global factor). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.69	2.35	0.76	0.76	0.92	0.59
ALJ11	2.69	2.56	1.51	0.48	0.48	0.59	0.38
AJT11	2.35	1.51	1.96	0.42	0.42	0.52	0.33
CLL10	0.76	0.48	0.42	0.81	0.54	0.67	0.42
CLJ10	0.76	0.48	0.42	0.54	0.81	0.67	0.42
CLL11	0.92	0.59	0.52	0.67	0.67	1.21	0.52
CMJ11	0.59	0.38	0.33	0.42	0.42	0.52	0.49

Table 9: Full input covariance between measurements (summed over error sources). Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.69	2.35	0.76	0.76	0.92	0.59
ALJ11	2.69	2.56	1.51	0.48	0.48	0.59	0.38
AJT11	2.35	1.51	1.96	0.42	0.42	0.52	0.33
CLL10	0.76	0.48	0.42	0.81	0.54	0.67	0.42
CLJ10	0.76	0.48	0.42	0.54	0.81	0.67	0.42
CLL11	0.92	0.59	0.52	0.67	0.67	1.21	0.52
CMJ11	0.59	0.38	0.33	0.42	0.42	0.52	0.49

Table 10: Partial input covariance between measurements. Error source #0: bJES. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

2.3 Minimize correlations by one factor per error source.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	-8.83	6.92	5.10	6.12	2.50
ALJ11	174.50 ± 1.60	4.75	16.89	0.60	3.29	1.60
AJT11	174.90 ± 1.40	13.84	22.06	3.93	9.59	1.40
CLL10	175.50 ± 0.90	13.31	53.37	1.39	9.23	0.90
CLJ10	173.10 ± 0.90	13.31	53.37	1.39	9.23	0.90
CLL11	173.30 ± 1.10	-13.33	35.73	2.08	9.24	1.10
CMJ11	172.60 ± 0.70	76.94	88.23	28.06	53.31	0.70
Correlations	—	—	-176.56	—	—	—
BLUE mt	173.66 ± 0.66	100.00	100.00	42.56	100.00	0.66

Table 11: BLUE of the combination (χ^2/ndof= 33.54/6). For each input measurement i the following are listed: the central value weight CVW$_i$ or λ_i, the intrinsic information weight IIW$_i$, the marginal information weight MIW$_i$, the relative importance RI$_i$. The intrinsic information weight IIW$_{\text{corr}}$ of correlations is also shown on a separate row.

Parameter name	ParID	Parameter value ScaleFactor X @MIN	$1/I^{nom}$*dI/dX @0	@MIN	@1	Fixed or Variable
bJES	#0	0.7076 ± 0.8534	-4.6629	∼ 0	13.8369	Variable

Table 12: Normalised Fisher information derivatives $1/I^{nom}$*dI/dX (before and after minimization) and minimization results. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to the corresponding nominal correlation, and all normalized by the information I^{nom} at nominal correlations ("@1"). They are computed at three different values of the scale factors X: for nominal values of all correlations (i.e. when all scale factors are 1: "@1"), for correlations all equal to zero (i.e. when all scale factors are 0: "@0") and for the scale factors minimizing Fisher information ("@MIN"). In the minimization, the scale factors X were varied (between 0 and 1, starting at 1) unless dI/dX@0 == dI/dX@1 == 0. A minimum was found in this minimization.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	0.052	0.052
AJT11 / ALJ10	0.133	0.133
AJT11 / ALJ11	-0.046	-0.046
CLL10 / ALJ10	0.041	0.041
CLL10 / ALJ11	-0.014	-0.014
CLL10 / AJT11	-0.036	-0.036
CLJ10 / ALJ10	0.041	0.041
CLJ10 / ALJ11	-0.014	-0.014
CLJ10 / AJT11	-0.036	-0.036
CLJ10 / CLL10	-0.045	-0.045
CLL11 / ALJ10	-0.050	-0.050
CLL11 / ALJ11	0.017	0.017
CLL11 / AJT11	0.044	0.044
CLL11 / CLL10	0.055	0.055
CLL11 / CLJ10	0.055	0.055
CMJ11 / ALJ10	0.185	0.185
CMJ11 / ALJ11	-0.064	-0.064
CMJ11 / AJT11	-0.162	-0.162
CMJ11 / CLL10	-0.201	-0.201
CMJ11 / CLJ10	-0.201	-0.201
CMJ11 / CLL11	0.246	0.246
ErrSrc	~ 0	GlobFact ~ 0

Table 13: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: correlations in minimization by error source). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.69	2.35	0.76	0.76	0.92	0.59
ALJ11	2.69	2.56	1.51	0.48	0.48	0.59	0.38
AJT11	2.35	1.51	1.96	0.42	0.42	0.52	0.33
CLL10	0.76	0.48	0.42	0.81	0.54	0.67	0.42
CLJ10	0.76	0.48	0.42	0.54	0.81	0.67	0.42
CLL11	0.92	0.59	0.52	0.67	0.67	1.21	0.52
CMJ11	0.59	0.38	0.33	0.42	0.42	0.52	0.49

Table 14: Full input covariance between measurements (summed over error sources). Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.69	2.35	0.76	0.76	0.92	0.59
ALJ11	2.69	2.56	1.51	0.48	0.48	0.59	0.38
AJT11	2.35	1.51	1.96	0.42	0.42	0.52	0.33
CLL10	0.76	0.48	0.42	0.81	0.54	0.67	0.42
CLJ10	0.76	0.48	0.42	0.54	0.81	0.67	0.42
CLL11	0.92	0.59	0.52	0.67	0.67	1.21	0.52
CMJ11	0.59	0.38	0.33	0.42	0.42	0.52	0.49

Table 15: Partial input covariance between measurements. Error source #0: bJES. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

2.4 Minimize correlations by one factor per off-diagonal element.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	∼ 0	7.83	∼ 0	∼ 0	2.50
ALJ11	174.50 ± 1.60	∼ 0	19.13	∼ 0	∼ 0	1.60
AJT11	174.90 ± 1.40	1.61	24.98	0.03	1.61	1.40
CLL10	175.50 ± 0.90	∼ 0	60.45	∼ 0	∼ 0	0.90
CLJ10	173.10 ± 0.90	∼ 0	60.45	∼ 0	∼ 0	0.90
CLL11	173.30 ± 1.10	∼ 0	40.46	∼ 0	∼ 0	1.10
CMJ11	172.60 ± 0.70	98.39	99.92	35.52	98.38	0.70
Correlations	—	—	-213.21	—	—	—
BLUE mt	172.64 ± 0.70	100.00	100.00	35.56	100.00	0.70

Table 16: BLUE of the combination (χ^2/ndof= 87.90/6). For each input measurement i the following are listed: the central value weight CVW_i or λ_i, the intrinsic information weight IIW_i , the marginal information weight MIW_i, the relative importance RI_i. The intrinsic information weight $\mathrm{IIW}_{\mathrm{corr}}$ of correlations is also shown on a separate row.

Parameter name	ParID	Parameter value ScaleFactor X @MIN	$1/I^{nom}$*dI/dX @0	@MIN	@1	Fixed or Variable
ALJ11/ALJ10	#0	0.6606 ± ~ 0	-0.0920	~ 0	1.2043	Variable
AJT11/ALJ10	#1	0.5574 ± ~ 0	-0.1051	~ 0	3.5609	Variable
AJT11/ALJ11	#2	0.8483 ± ~ 0	-0.1642	~ 0	-0.9058	Variable
CLL10/ALJ10	#3	0.5697 ± ~ 0	-0.0817	~ 0	-0.1874	Variable
CLL10/ALJ11	#4	0.9888 ± ~ 0	-0.1277	~ 0	0.0477	Variable
CLL10/AJT11	#5	0.9949 ± ~ 0	-0.1460	~ 0	0.1409	Variable
CLJ10/ALJ10	#6	0.5697 ± ~ 0	-0.0817	~ 0	-0.1874	Variable
CLJ10/ALJ11	#7	0.9888 ± ~ 0	-0.1277	~ 0	0.0477	Variable
CLJ10/AJT11	#8	0.9949 ± ~ 0	-0.1460	~ 0	0.1409	Variable
CLJ10/CLL10	#9	0.9982 ± ~ 0	-0.4542	~ 0	-0.0297	Variable
CLL11/ALJ10	#10	0.9263 ± ~ 0	-0.0669	~ 0	-2.8534	Variable
CLL11/ALJ11	#11	0.9953 ± ~ 0	-0.1045	~ 0	0.7259	Variable
CLL11/AJT11	#12	0.9453 ± ~ 0	-0.1194	~ 0	2.1462	Variable
CLL11/CLL10	#13	0.8539 ± ~ 0	-0.3716	~ 0	-0.4518	Variable
CLL11/CLJ10	#14	0.8539 ± 0.0001	-0.3716	~ 0	-0.4518	Variable
CMJ11/ALJ10	#15	0.5622 ± ~ 0	-0.1051	~ 0	4.0021	Variable
CMJ11/ALJ11	#16	0.8798 ± ~ 0	-0.1642	~ 0	-1.0181	Variable
CMJ11/AJT11	#17	1.0000 ± ~ 0	-0.1877	-0.0119	-3.0102	Variable
CMJ11/CLL10	#18	0.8152 ± ~ 0	-0.5839	~ 0	0.6336	Variable
CMJ11/CLJ10	#19	0.8152 ± ~ 0	-0.5839	~ 0	0.6336	Variable
CMJ11/CLL11	#20	0.6648 ± ~ 0	-0.4777	~ 0	9.6485	Variable

Table 17: Normalised Fisher information derivatives $1/I^{nom}$*dI/dX (before and after minimization) and minimization results. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to the corresponding nominal correlation, and all normalized by the information I^{nom} at nominal correlations ("@1"). They are computed at three different values of the scale factors X: for nominal values of all correlations (i.e. when all scale factors are 1: "@1"), for correlations all equal to zero (i.e. when all scale factors are 0: "@0") and for the scale factors minimizing Fisher information ("@MIN"). In the minimization, the scale factors X were varied (between 0 and 1, starting at onionized covariances) unless dI/dX@0 == dI/dX@1 == 0. A minimum was found in this minimization.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	~ 0	~ 0
AJT11 / ALJ10	~ 0	~ 0
AJT11 / ALJ11	~ 0	~ 0
CLL10 / ALJ10	~ 0	~ 0
CLL10 / ALJ11	~ 0	~ 0
CLL10 / AJT11	~ 0	~ 0
CLJ10 / ALJ10	~ 0	~ 0
CLJ10 / ALJ11	~ 0	~ 0
CLJ10 / AJT11	~ 0	~ 0
CLJ10 / CLL10	~ 0	~ 0
CLL11 / ALJ10	~ 0	~ 0
CLL11 / ALJ11	~ 0	~ 0
CLL11 / AJT11	~ 0	~ 0
CLL11 / CLL10	~ 0	~ 0
CLL11 / CLJ10	~ 0	~ 0
CMJ11 / ALJ10	~ 0	~ 0
CMJ11 / ALJ11	~ 0	~ 0
CMJ11 / AJT11	-0.030	-0.030
CMJ11 / CLL10	~ 0	~ 0
CMJ11 / CLJ10	~ 0	~ 0
CMJ11 / CLL11	~ 0	~ 0
ErrSrc	-0.030	GlobFact -0.030

Table 18: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: correlations in minimization by off-diagonal elements). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.51	1.85	0.61	0.61	1.21	0.47
ALJ11	2.51	2.56	1.81	0.68	0.68	0.83	0.47
AJT11	1.85	1.81	1.96	0.60	0.60	0.69	0.47
CLL10	0.61	0.68	0.60	0.81	0.77	0.80	0.49
CLJ10	0.61	0.68	0.60	0.77	0.81	0.80	0.49
CLL11	1.21	0.83	0.69	0.80	0.80	1.21	0.49
CMJ11	0.47	0.47	0.47	0.49	0.49	0.49	0.49

Table 19: Full input covariance between measurements (summed over error sources). Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.51	1.85	0.61	0.61	1.21	0.47
ALJ11	2.51	2.56	1.81	0.68	0.68	0.83	0.47
AJT11	1.85	1.81	1.96	0.60	0.60	0.69	0.47
CLL10	0.61	0.68	0.60	0.81	0.77	0.80	0.49
CLJ10	0.61	0.68	0.60	0.77	0.81	0.80	0.49
CLL11	1.21	0.83	0.69	0.80	0.80	1.21	0.49
CMJ11	0.47	0.47	0.47	0.49	0.49	0.49	0.49

Table 20: Partial input covariance between measurements. Error source #0: bJES. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

2.5 Remove measurements with negative central value weights.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
AJT11	174.90 ± 1.40	1.61	24.98	0.08	1.61	1.40
CMJ11	172.60 ± 0.70	98.39	99.92	75.02	98.39	0.70
Correlations	—	—	-24.90	—	—	—
BLUE mt	172.64 ± 0.70	100.00	100.00	75.10	100.00	0.70

Table 21: BLUE of the combination (χ^2/ndof= 3.48/1). For each input measurement i the following are listed: the central value weight CVW_i or λ_i, the intrinsic information weight IIW_i , the marginal information weight MIW_i, the relative importance RI_i. The intrinsic information weight $\mathrm{IIW}_{\mathrm{corr}}$ of correlations is also shown on a separate row.

N meas in BLUE	Measurement removed in iteration			BLUE	bJES	χ^2/ndof
	Removed	CVW/%	MIW/%			
7	CLL11	-76.11	24.00	173.84 ± 0.44	0.44	219.60/6
6	CLJ10	-47.91	5.41	173.58 ± 0.50	0.50	218.42/5
5	CLL10	-75.13	16.42	173.17 ± 0.52	0.52	207.20/4
4	ALJ10	-46.92	31.66	175.88 ± 0.57	0.57	68.81/3
3	ALJ11	-26.49	3.69	172.78 ± 0.69	0.69	4.67/2
2	*NONE*	N/A	N/A	172.64 ± 0.70	0.70	3.48/1

Table 22: From the original combination of 7 with nominal correlations, a new combination where all remaining 2 measurements have central value weights CVW>0 was derived by removing measurements iteratively. At each step of the iteration, the measurement with the most negative CVW<=0 in the combination with N measurements was removed until all remainining measurements had CVW>0 in the combination of N-1 measurements. For each iteration and for the final result, the results of the BLUE and the name, CVW and MIW of the measurement removed in that iteration are displayed.

OffDiag & ErrSrc	bJES	OffDiag
CMJ11 / AJT11	-0.030	-0.030
ErrSrc	-0.030	GlobFact -0.030

Table 23: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: correlations in combination with CVW>0 measurements). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	AJT11	CMJ11
AJT11	1.96	0.47
CMJ11	0.47	0.49

Table 24: Full input covariance between measurements (summed over error sources).

	AJT11	CMJ11
AJT11	1.96	0.47
CMJ11	0.47	0.49

Table 25: Partial input covariance between measurements. Error source #0: bJES.

2.6 Onionize correlations.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	0.02	7.82	~ 0	0.02	2.50
ALJ11	174.50 ± 1.60	-4.04	19.09	0.17	3.71	1.60
AJT11	174.90 ± 1.40	5.59	24.93	0.28	5.14	1.40
CLL10	175.50 ± 0.90	0.25	60.32	~ 0	0.23	0.90
CLJ10	173.10 ± 0.90	0.25	60.32	~ 0	0.23	0.90
CLL11	173.30 ± 1.10	-0.37	40.38	~ 0	0.34	1.10
CMJ11	172.60 ± 0.70	98.29	99.72	35.01	90.33	0.70
Correlations	—	—	-212.59	—	—	—
BLUE mt	172.66 ± 0.70	100.00	100.00	35.46	100.00	0.70

Table 26: BLUE of the combination (χ^2/ndof= 94.69/6). For each input measurement i the following are listed: the central value weight CVW_i or λ_i, the intrinsic information weight IIW_i , the marginal information weight MIW_i, the relative importance RI_i. The intrinsic information weight $\mathrm{IIW}_{\mathrm{corr}}$ of correlations is also shown on a separate row.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	~ 0	~ 0
AJT11 / ALJ10	~ 0	~ 0
AJT11 / ALJ11	0.018	0.018
CLL10 / ALJ10	~ 0	~ 0
CLL10 / ALJ11	~ 0	~ 0
CLL10 / AJT11	~ 0	~ 0
CLJ10 / ALJ10	~ 0	~ 0
CLJ10 / ALJ11	~ 0	~ 0
CLJ10 / AJT11	~ 0	~ 0
CLJ10 / CLL10	~ 0	~ 0
CLL11 / ALJ10	~ 0	~ 0
CLL11 / ALJ11	-0.001	-0.001
CLL11 / AJT11	0.001	0.001
CLL11 / CLL10	~ 0	~ 0
CLL11 / CLJ10	~ 0	~ 0
CMJ11 / ALJ10	~ 0	~ 0
CMJ11 / ALJ11	0.080	0.080
CMJ11 / AJT11	-0.105	-0.105
CMJ11 / CLL10	-0.005	-0.005
CMJ11 / CLJ10	-0.005	-0.005
CMJ11 / CLL11	0.007	0.007
ErrSrc	-0.010	GlobFact -0.010

Table 27: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: correlations in onionization 1st recipe). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.56	1.96	0.81	0.81	1.21	0.49
ALJ11	2.56	2.56	1.96	0.68	0.68	0.84	0.49
AJT11	1.96	1.96	1.96	0.60	0.60	0.73	0.47
CLL10	0.81	0.68	0.60	0.81	0.77	0.81	0.49
CLJ10	0.81	0.68	0.60	0.77	0.81	0.81	0.49
CLL11	1.21	0.84	0.73	0.81	0.81	1.21	0.49
CMJ11	0.49	0.49	0.47	0.49	0.49	0.49	0.49

Table 28: Full input covariance between measurements (summed over error sources). Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	2.56	1.96	0.81	0.81	1.21	0.49
ALJ11	2.56	2.56	1.96	0.68	0.68	0.84	0.49
AJT11	1.96	1.96	1.96	0.60	0.60	0.73	0.47
CLL10	0.81	0.68	0.60	0.81	0.77	0.81	0.49
CLJ10	0.81	0.68	0.60	0.77	0.81	0.81	0.49
CLL11	1.21	0.84	0.73	0.81	0.81	1.21	0.49
CMJ11	0.49	0.49	0.47	0.49	0.49	0.49	0.49

Table 29: Partial input covariance between measurements. Error source #0: bJES. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

2.7 Zero correlations.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	bJES
ALJ10	169.30 ± 2.50	2.50	2.50	2.50	2.50	2.50
ALJ11	174.50 ± 1.60	6.11	6.11	6.11	6.11	1.60
AJT11	174.90 ± 1.40	7.98	7.98	7.98	7.98	1.40
CLL10	175.50 ± 0.90	19.30	19.30	19.30	19.30	0.90
CLJ10	173.10 ± 0.90	19.30	19.30	19.30	19.30	0.90
CLL11	173.30 ± 1.10	12.92	12.92	12.92	12.92	1.10
CMJ11	172.60 ± 0.70	31.90	31.90	31.90	31.90	0.70
Correlations	—	—	0	—	—	—
BLUE mt	173.56 ± 0.40	100.00	100.00	100.00	100.00	0.40

Table 30: BLUE of the combination (χ^2/ndof= 11.01/6). For each input measurement i the following are listed: the central value weight CVW_i or λ_i, the intrinsic information weight IIW_i , the marginal information weight MIW_i, the relative importance RI_i. The intrinsic information weight $\mathrm{IIW}_{\mathrm{corr}}$ of correlations is also shown on a separate row.

OffDiag & ErrSrc	bJES	OffDiag
ALJ11 / ALJ10	0	0
AJT11 / ALJ10	0	0
AJT11 / ALJ11	0	0
CLL10 / ALJ10	0	0
CLL10 / ALJ11	0	0
CLL10 / AJT11	0	0
CLJ10 / ALJ10	0	0
CLJ10 / ALJ11	0	0
CLJ10 / AJT11	0	0
CLJ10 / CLL10	0	0
CLL11 / ALJ10	0	0
CLL11 / ALJ11	0	0
CLL11 / AJT11	0	0
CLL11 / CLL10	0	0
CLL11 / CLJ10	0	0
CMJ11 / ALJ10	0	0
CMJ11 / ALJ11	0	0
CMJ11 / AJT11	0	0
CMJ11 / CLL10	0	0
CMJ11 / CLJ10	0	0
CMJ11 / CLL11	0	0
ErrSrc	0	GlobFact 0

Table 31: Normalised Fisher information derivatives 1/I*dI/dX for the combination under consideration. The derivatives in the table are computed with respect to scale factors X, representing the ratio of a given correlation to its "current" value in the combination under consideration, and all normalized by the information I for the "current" values of correlations. They are computed for the "current" values of correlations (in this case: zero correlations). Color boxes indicate normalised derivatives greater than 0.05 (yellow), 0.10 (orange) and 0.15 (red). The last column and last row list information derivatives when the same rescaling factor is used for a given off-diagonal element or error source, which are equal to the sums of individual derivatives in each row and column, respectively.

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	0	0	0	0	0	0
ALJ11	0	2.56	0	0	0	0	0
AJT11	0	0	1.96	0	0	0	0
CLL10	0	0	0	0.81	0	0	0
CLJ10	0	0	0	0	0.81	0	0
CLL11	0	0	0	0	0	1.21	0
CMJ11	0	0	0	0	0	0	0.49

Table 32: Full input covariance between measurements (summed over error sources). Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	ALJ10	ALJ11	AJT11	CLL10	CLJ10	CLL11	CMJ11
ALJ10	6.25	0	0	0	0	0	0
ALJ11	0	2.56	0	0	0	0	0
AJT11	0	0	1.96	0	0	0	0
CLL10	0	0	0	0.81	0	0	0
CLJ10	0	0	0	0	0.81	0	0
CLL11	0	0	0	0	0	1.21	0
CMJ11	0	0	0	0	0	0	0.49

Table 33: Partial input covariance between measurements. Error source #0: bJES. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

Appendix A1. Input data.

```
#============================================================================
#==== BlueFin input data file ================================================
#============================================================================

# The file is expected to have the following format.
# Blank lines and lines with only empty spaces are ignored.
# Lines starting by '#' are reserved for comments and are ignored.
# Data lines are composed of fields separated by one or more empty spaces.
# Fields cannot contain empty spaces, with the exception of the title line.

# The next line must have 2 fields: 'TITLE' and the title of the
# BlueFin combination, which must be enclosed within double quotes
# and may contain only alphanumeric characters or spaces or hyphens.
TITLE "LHC top mass combination 2012"

# The next line must have 2 fields: 'NOBS' and the number of observables.
NOBS 1

# The next line must have 2 fields: 'NMEA' and the number of measurements.
NMEA 7

# The next line must have 2 fields: 'NERR' and the number of error sources.
NERR 1

# The next NERR+3 lines must have NMEA+1 fields in this format:
# - in the 1st line: 'MEANAME' followed by NMEA distinct measurement names
#   (measurement names may contain only alphanumeric characters or spaces);
# - in the 2nd line: 'OBSNAME' followed by the NMEA names (with NOBS distinct
#   values) of the observables measured by the corresponding measurements
#   (observable names may contain only alphanumeric characters or spaces
#   and should preferably be at most 3 characters long);
# - in the 3rd line: 'MEAVAL' followed by the NMEA measured central values;
# - in each of the last NERR lines: the error source name followed by the
#   NMEA partial errors for each measurement due to the given error source
#   (error source names may contain only alphanumeric characters or spaces).
MEANAME    ALJ10    ALJ11    AJT11    CLL10    CLJ10    CLL11    CMJ11
OBSNAME       mt       mt       mt       mt       mt       mt       mt
MEAVAL  169.3000 174.5000 174.9000 175.5000 173.1000 173.3000 172.6000
bJES      2.5000   1.6000   1.4000   0.9000   0.9000   1.1000   0.7000

# The next NMEA*(NMEA-1)/2+1 rows must have NERR+2 fields in this format:
# - in the 1st line: 'CMEA1' 'CMEA2' (correlations between 2 measurements)
#   followed by the NERR error source names in the same order used above;
# - in each of the NMEA*(NMEA-1)/2 last lines: the names of two distinct
#   measurements followed by the NERR correlations between the partial
#   errors on the two measurements due to corresponding error source.
#   Measurements must appear in the same order listed above.
CMEA1 CMEA2  bJES
ALJ10 ALJ11 .9500
```

```
50 ALJ10 AJT11 .9500
51 ALJ10 CLL10 .4750
52 ALJ10 CLJ10 .4750
53 ALJ10 CLL11 .4750
54 ALJ10 CMJ11 .4750
55 ALJ11 AJT11 .9500
56 ALJ11 CLL10 .4750
57 ALJ11 CLJ10 .4750
58 ALJ11 CLL11 .4750
59 ALJ11 CMJ11 .4750
60 AJT11 CLL10 .4750
61 AJT11 CLJ10 .4750
62 AJT11 CLL11 .4750
63 AJT11 CMJ11 .4750
64 CLL10 CLJ10 .9500
65 CLL10 CLL11 .9500
66 CLL10 CMJ11 .9500
67 CLJ10 CLL11 .9500
68 CLJ10 CMJ11 .9500
69 CLL11 CMJ11 .9500
```

Input data file: `lhc2012bJESonly.bfin`.