1 Nominal correlations.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	-10.42	5.64	12.86	7.19	0.43	0.35	0.69	0
X2	172.35 ± 0.23	122.47	85.67	74.51	84.50	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	-12.06	23.70	3.57	8.32	0.19	0.24	0.28	0.12
Correlations	—	—	-15.02	—	—	—	—	—	—
BLUE x	172.28 ± 0.21	100.00	100.00	90.94	100.00	0.20	0.08	-nan	0.03

Table 1: BLUE of the combination (χ^2/ndof= 1.91/2). 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	0.242	0.398	0	0.641
X3 / X1	0	-0.048	0	0	-0.048
X3 / X2	0	0.192	0.187	0.032	0.412
ErrSrc	0	0.387	0.585	0.032	GlobFact 1.004

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.

	X1	X2	X3
X1	0.78	0.11	0.08
X2	0.11	0.05	0.06
X3	0.08	0.06	0.19

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

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

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

	X1	X2	X3
X1	0.12	0.04	0.08
X2	0.04	0.01	0.03
X3	0.08	0.03	0.06

Table 5: Partial input covariance between measurements. Error source #1: Sys1.

	X1	X2	X3
X1	0.48	0.07	0
X2	0.07	0.01	0.03
X3	0	0.03	0.08

Table 6: Partial input covariance between measurements. Error source #2: Sys2.

	X1	X2	X3
X1	0	0	0
X2	0	∼0	∼0
X3	0	∼0	0.01

Table 7: Partial input covariance between measurements. Error source #3: Sys3.

2 Modified correlations.

2.1 Summary of results.

Combination	BLUE	Stat	Sys1	Sys2	Sys3	χ^2/ndof
Nominal correlations	172.28 ± 0.21	0.20	0.08	-nan	0.03	1.91/2
Minimize by global factor	172.37 ± 0.22	0.16	0.12	0.10	0.04	1.35/2
Minimize by error sources	172.37 ± 0.23	0.16	0.12	0.10	0.05	1.35/2
Minimize by off-diagonal elements	172.35 ± 0.23	0.16	0.12	0.10	0.04	1.50/2
Remove negative CVWs	172.35 ± 0.23	0.16	0.12	0.10	0.04	0/0
Onionize	172.41 ± 0.22	0.14	0.12	0.11	0.04	1.09/2
NO correlations	172.45 ± 0.20	0.13	0.10	0.10	0.04	0.85/2

Table 8: 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/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	-3.33	6.41	1.49	3.12	0.43	0.35	0.69	0
X2	172.35 ± 0.23	97.04	97.27	69.91	90.98	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	6.29	26.91	1.21	5.90	0.19	0.24	0.28	0.12
Correlations	—	—	-30.59	—	—	—	—	—	—
BLUE x	172.37 ± 0.22	100.00	100.00	72.61	100.00	0.16	0.12	0.10	0.04

Table 9: BLUE of the combination (χ^2/ndof= 1.35/2). 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
GlobalScaleFact	#0	0.6750 ± 0.7928	-0.8595	∼ 0	1.0044	Variable

Table 10: 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	0.036	0.060	0	0.096
X3 / X1	0	0.005	0	0	0.005
X3 / X2	0	-0.047	-0.046	-0.008	-0.101
ErrSrc	0	-0.006	0.014	-0.008	GlobFact ∼ 0

Table 11: 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.

	X1	X2	X3
X1	0.78	0.07	0.06
X2	0.07	0.05	0.04
X3	0.06	0.04	0.19

Table 12: 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).

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

Table 13: Partial input covariance between measurements. Error source #0: Stat. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.12	0.03	0.06
X2	0.03	0.01	0.02
X3	0.06	0.02	0.06

Table 14: Partial input covariance between measurements. Error source #1: Sys1. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.48	0.05	0
X2	0.05	0.01	0.02
X3	0	0.02	0.08

Table 15: Partial input covariance between measurements. Error source #2: Sys2. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0	0	0
X2	0	∼0	∼0
X3	0	∼0	0.01

Table 16: Partial input covariance between measurements. Error source #3: Sys3. 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/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	-2.33	6.48	0.74	2.22	0.43	0.35	0.69	0
X2	172.35 ± 0.23	96.59	98.43	70.71	92.29	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	5.74	27.23	0.96	5.48	0.19	0.24	0.28	0.12
Correlations	—	—	-32.15	—	—	—	—	—	—
BLUE x	172.37 ± 0.23	100.00	100.00	72.41	100.00	0.16	0.12	0.10	0.05

Table 17: BLUE of the combination (χ^2/ndof= 1.35/2). 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
Stat	#0	1.0000 ± N/A	0	0	0	FIXED
Sys1	#1	1.0000 ± 0.8859	-0.4073	-0.0185	0.3871	Variable
Sys2	#2	0.3547 ± 0.7867	-0.4081	∼ 0	0.5853	Variable
Sys3	#3	1.0000 ± 0.8761	-0.0441	-0.0091	0.0321	Variable

Table 18: 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	0.037	0.022	0	0.059
X3 / X1	0	0.004	0	0	0.004
X3 / X2	0	-0.063	-0.022	-0.010	-0.095
ErrSrc	0	-0.021	∼ 0	-0.010	GlobFact -0.032

Table 19: 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.

	X1	X2	X3
X1	0.78	0.07	0.08
X2	0.07	0.05	0.04
X3	0.08	0.04	0.19

Table 20: 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).

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

Table 21: Partial input covariance between measurements. Error source #0: Stat. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.12	0.04	0.08
X2	0.04	0.01	0.03
X3	0.08	0.03	0.06

Table 22: Partial input covariance between measurements. Error source #1: Sys1. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.48	0.02	0
X2	0.02	0.01	0.01
X3	0	0.01	0.08

Table 23: Partial input covariance between measurements. Error source #2: Sys2. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0	0	0
X2	0	∼0	∼0
X3	0	∼0	0.01

Table 24: Partial input covariance between measurements. Error source #3: Sys3. 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/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	~ 0	6.59	~ 0	~ 0	0.43	0.35	0.69	0
X2	172.35 ± 0.23	100.00	100.00	70.24	100.00	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	~ 0	27.67	~ 0	~ 0	0.19	0.24	0.28	0.12
Correlations	—	—	-34.25	—	—	—	—	—	—
BLUE x	172.35 ± 0.23	100.00	100.00	70.24	100.00	0.16	0.12	0.10	0.04

Table 25: BLUE of the combination (χ^2/ndof= 1.50/2). 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$^{\text{nom}}$*dI/dX @0	@MIN	@1	Fixed or Variable
X2/X1	#0	0.4649 ± 0.7236	-0.2427	~ 0	0.6406	Variable
X3/X1	#1	1.0000 ± 0.8525	-0.0508	~ 0	-0.0477	Variable
X3/X2	#2	0.8377 ± 0.8848	-0.5659	~ 0	0.4115	Variable

Table 26: Normalised Fisher information derivatives 1/I$^{\text{nom}}$*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$^{\text{nom}}$ 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	~ 0	~ 0	0	~ 0
X3 / X1	0	~ 0	0	0	~ 0
X3 / X2	0	~ 0	~ 0	~ 0	~ 0
ErrSrc	0	~ 0	~ 0	~ 0	GlobFact ~ 0

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 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.

	X1	X2	X3
X1	0.78	0.05	0.08
X2	0.05	0.05	0.05
X3	0.08	0.05	0.19

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).

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

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

	X1	X2	X3
X1	0.12	0.02	0.08
X2	0.02	0.01	0.02
X3	0.08	0.02	0.06

Table 30: Partial input covariance between measurements. Error source #1: Sys1. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.48	0.03	0
X2	0.03	0.01	0.02
X3	0	0.02	0.08

Table 31: Partial input covariance between measurements. Error source #2: Sys2. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0	0	0
X2	0	∼0	∼0
X3	0	∼0	0.01

Table 32: Partial input covariance between measurements. Error source #3: Sys3. 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/%	Stat	Sys1	Sys2	Sys3
X2	172.35 ± 0.23	100.00	100.00	100.00	100.00	0.16	0.12	0.10	0.04
Correlations	—	—	0	—	—	—	—	—	—
BLUE x	172.35 ± 0.23	100.00	100.00	100.00	100.00	0.16	0.12	0.10	0.04

Table 33: BLUE of the combination (χ^2/ndof= 0/0). 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_{corr} of correlations is also shown on a separate row.

N meas in BLUE	Measurement removed in iteration			BLUE	Stat	Sys1	Sys2	Sys3	χ^2/ndof
	Removed	CVW/%	MIW/%						
3	X3	-12.06	3.57	172.28 ± 0.21	0.20	0.08	-nan	0.03	1.91/2
2	X1	-9.69	11.15	172.34 ± 0.21	0.18	0.10	0.04	0.04	0.04/1
1	*NONE*	N/A	N/A	172.35 ± 0.23	0.16	0.12	0.10	0.04	0/0

Table 34: From the original combination of 3 with nominal correlations, a new combination where all remaining 1 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	Stat	Sys1	Sys2	Sys3	OffDiag
ErrSrc	0	0	0	0	GlobFact 0

Table 35: 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.

	X2
X2	0.05

Table 36: Full input covariance between measurements (summed over error sources).

	X2
X2	0.03

Table 37: Partial input covariance between measurements. Error source #0: Stat.

	X2
X2	0.01

Table 38: Partial input covariance between measurements. Error source #1: Sys1.

	X2
X2	0.01

Table 39: Partial input covariance between measurements. Error source #2: Sys2.

	X2
X2	∼0

Table 40: Partial input covariance between measurements. Error source #3: Sys3.

2.6 Onionize correlations.

Measurements		CVW/%	IIW/%	MIW/%	RI/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	2.49	6.08	0.99	2.49	0.43	0.35	0.69	0
X2	172.35 ± 0.23	84.54	92.25	71.51	84.54	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	12.97	25.52	6.03	12.97	0.19	0.24	0.28	0.12
Correlations	—	—	-23.85	—	—	—	—	—	—
BLUE x	172.41 ± 0.22	100.00	100.00	78.53	100.00	0.14	0.12	0.11	0.04

Table 41: BLUE of the combination (χ^2/ndof= 1.09/2). 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	-0.013	-0.009	0	-0.022
X3 / X1	0	-0.008	0	0	-0.008
X3 / X2	0	-0.066	-0.046	-0.007	-0.120
ErrSrc	0	-0.087	-0.055	-0.007	GlobFact -0.149

Table 42: 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.

	X1	X2	X3
X1	0.78	0.02	0.06
X2	0.02	0.05	0.03
X3	0.06	0.03	0.19

Table 43: 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).

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

Table 44: Partial input covariance between measurements. Error source #0: Stat. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.12	0.01	0.06
X2	0.01	0.01	0.01
X3	0.06	0.01	0.06

Table 45: Partial input covariance between measurements. Error source #1: Sys1. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.48	0.01	0
X2	0.01	0.01	0.01
X3	0	0.01	0.08

Table 46: Partial input covariance between measurements. Error source #2: Sys2. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0	0	0
X2	0	∼0	∼0
X3	0	∼0	0.01

Table 47: Partial input covariance between measurements. Error source #3: Sys3. 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/%	Stat	Sys1	Sys2	Sys3
X1	172.50 ± 0.89	4.91	4.91	4.91	4.91	0.43	0.35	0.69	0
X2	172.35 ± 0.23	74.49	74.49	74.49	74.49	0.16	0.12	0.10	0.04
X3	172.80 ± 0.43	20.61	20.61	20.61	20.61	0.19	0.24	0.28	0.12
Correlations	—	—	0	—	—	—	—	—	—
BLUE x	172.45 ± 0.20	100.00	100.00	100.00	100.00	0.13	0.10	0.10	0.04

Table 48: BLUE of the combination (χ^2/ndof= 0.85/2). 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	Stat	Sys1	Sys2	Sys3	OffDiag
X2 / X1	0	0	0	0	0
X3 / X1	0	0	0	0	0
X3 / X2	0	0	0	0	0
ErrSrc	0	0	0	0	GlobFact 0

Table 49: 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.

	X1	X2	X3
X1	0.78	0	0
X2	0	0.05	0
X3	0	0	0.19

Table 50: 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).

	X1	X2	X3
X1	0.18	0	0
X2	0	0.03	0
X3	0	0	0.04

Table 51: Partial input covariance between measurements. Error source #0: Stat. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.12	0	0
X2	0	0.01	0
X3	0	0	0.06

Table 52: Partial input covariance between measurements. Error source #1: Sys1. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0.48	0	0
X2	0	0.01	0
X3	0	0	0.08

Table 53: Partial input covariance between measurements. Error source #2: Sys2. Color boxes indicate covariances lower than nominal values by a factor up to 2 (green), up to 3 (cyan) or greater than 3 (blue).

	X1	X2	X3
X1	0	0	0
X2	0	∼0	0
X3	0	0	0.01

Table 54: Partial input covariance between measurements. Error source #3: Sys3. 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 "2018-06 Discussion with A Rej and R Nisius - example with flag 0"

# 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 3

# The next line must have 2 fields: 'NERR' and the number of error sources.
NERR 4

# 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     X1       X2       X3
OBSNAME      x        x        x
MEAVAL  172.50   172.35   172.80
Stat      0.43     0.16     0.19
Sys1      0.35     0.12     0.24
Sys2      0.69     0.10     0.28
Sys3      0.00     0.04     0.12

# 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  Stat  Sys1  Sys2  Sys3
X1     X2        0     1     1     1
X1     X3        0     1     0     0
X2     X3        0     1     1     1
```

Input data file: `misc201806RNflag0.bfin`.