1 Nominal correlations.

Measurements		CVWele/%	CVWtau/%	Stat	Sys1	Sys2	Sys3	Sys4
Aele	10.50 ± 1.00	86.70	0	0	0	0	1.00	0
Bele	13.50 ± 3.00	13.30	0	0	0	0	3.00	0
BLUE ele	10.90 ± 0.90	100.00	0	0	0	0	0.90	0

Measurements		CVWele/%	CVWtau/%	Stat	Sys1	Sys2	Sys3	Sys4
Atau	9.50 ± 3.00	0	50.00	0	0	3.00	0	0
Btau	14.00 ± 3.00	0	50.00	0	0	0	0	3.00
BLUE tau	11.75 ± 2.12	0	100.00	0	0	1.50	0	1.50

Table 1: BLUE's of the combination (χ^2/ndof= 1.95/2). Values /10000 are displayed. For each input measurement i, the central value weight CVW or λ_i^α with which that measurement contributes to the BLUE for observable α is listed.

	ele	tau
ele	1.00	0
tau	0	1.00

Table 2: Correlations between the BLUE's.

	Aele	Atau	Bele	Btau
Aele	1.00	0	−0.45	0
Atau	0	9.00	0	0
Bele	−0.45	0	9.00	0
Btau	0	0	0	9.00

Table 3: Full input covariance between measurements (summed over error sources). Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 4: Partial input covariance between measurements. Error source #0: Stat. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 5: Partial input covariance between measurements. Error source #1: Sys1. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	9.00	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 6: Partial input covariance between measurements. Error source #2: Sys2. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	1.00	0	−0.45	0
Atau	0	0	0	0
Bele	−0.45	0	9.00	0
Btau	0	0	0	0

Table 7: Partial input covariance between measurements. Error source #3: Sys3. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	9.00

Table 8: Partial input covariance between measurements. Error source #4: Sys4. Values /100M are displayed.

2 Modified correlations.

2.1 Zero correlations.

Measurements		CVWele/%	CVWtau/%	Stat	Sys1	Sys2	Sys3	Sys4
Aele	10.50 ± 1.00	90.00	0	0	0	0	1.00	0
Bele	13.50 ± 3.00	10.00	0	0	0	0	3.00	0
BLUE ele	10.80 ± 0.95	100.00	0	0	0	0	0.95	0

Measurements		CVWele/%	CVWtau/%	Stat	Sys1	Sys2	Sys3	Sys4
Atau	9.50 ± 3.00	0	50.00	0	0	3.00	0	0
Btau	14.00 ± 3.00	0	50.00	0	0	0	0	3.00
BLUE tau	11.75 ± 2.12	0	100.00	0	0	1.50	0	1.50

Table 9: BLUE's of the combination (χ^2/ndof= 2.02/2). Values /10000 are displayed. For each input measurement i, the central value weight CVW or λ_i^α with which that measurement contributes to the BLUE for observable α is listed.

	ele	tau
ele	1.00	0
tau	0	1.00

Table 10: Correlations between the BLUE's.

	Aele	Atau	Bele	Btau
Aele	1.00	0	0	0
Atau	0	9.00	0	0
Bele	0	0	9.00	0
Btau	0	0	0	9.00

Table 11: Full input covariance between measurements (summed over error sources). Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 12: Partial input covariance between measurements. Error source #0: Stat. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 13: Partial input covariance between measurements. Error source #1: Sys1. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	9.00	0	0
Bele	0	0	0	0
Btau	0	0	0	0

Table 14: Partial input covariance between measurements. Error source #2: Sys2. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	1.00	0	0	0
Atau	0	0	0	0
Bele	0	0	9.00	0
Btau	0	0	0	0

Table 15: Partial input covariance between measurements. Error source #3: Sys3. Values /100M are displayed.

	Aele	Atau	Bele	Btau
Aele	0	0	0	0
Atau	0	0	0	0
Bele	0	0	0	0
Btau	0	0	0	9.00

Table 16: Partial input covariance between measurements. Error source #4: Sys4. Values /100M are displayed.

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 "W branching ratio Ex2m15"

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

# The next line must have 2 fields: 'NMEA' and the number of measurements.
NMEA 4

# The next line must have 2 fields: 'NERR' and the number of error sources.
NERR 5

# 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    Aele    Atau    Bele    Btau
OBSNAME     ele     tau     ele     tau
MEAVAL   105000   95000  135000  140000
Stat          0       0       0       0
Sys1          0       0       0       0
Sys2          0   30000       0       0
Sys3      10000       0   30000       0
Sys4          0       0       0   30000

# 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 Sys4
Aele  Atau      0    0    0    0    0
Aele  Bele      0    0    0 -.15    0
Aele  Btau      0    0    0    0    0
Atau  Bele      0    0    0    0    0
Atau  Btau      0    0    0 -.15    0
Bele  Btau      0    0    0    0    0
```

Input data file: `Ex2_m15.bfin`.