General information Tables are given in the Appendix:

Table T1: list of the IERS sites;
Table T2: list of points and markers for the IERS sites;
Table T3: summary of the occupancies of the IERS sites by VLBI, LLR, GPS, SLR and DORIS;
Table T4: local eccentricities for the IERS sites.

ANALYSIS PER TECHNIQUE OF CLASS I SOLUTIONS

In order to assess the relative quality of the different solutions independently from the influence of the local ties, analyses restricted to combinations and comparison within each observing technique are performed, based on a seven transformation parameters model. Two specific parameters are considered:

- the Factor of Unit Variances (SIG0) of an entire comparison/combination, and

- the Factor of Unit Variances per solution (labelled NSX2, see below), computed by taking into account the correlations between the estimated parameters.

These analyses also lead to the estimation of the Matrix Scaling Factor.

One expects that the SIG0 be 1 and that the values of NSX2 of the solutions incorporated in the comparison/combination be equal to each other and not far from the unity. Practically, these two conditions could be easily satisfied in case of two solutions, by repeating the comparison and varying the Matrix Scaling Factors till we have identical NSX2 for the two solutions. But the two conditions are more difficult to satisfy in case of three or more solutions. In this second case, two types of analysis per pair of solutions have been performed:

- comparisons per pair of solutions over all common points,

- comparisons per pair of solutions over common points of the three solutions.

Based on these two types of analysis, one combination per technique has been adopted as optimal combination, yielding to the Matrix Scaling Factor for each individual solution. Tables 2 to 5 list the statistical numbers for each optimal combination per technique. Note that all these combinations were performed at epoch 1993.0. The captions of these tables are:

N : Number of common points

SP : 2-D unweighted RMS

SU : Vertical unweighted RMS

SX : 3-D unweighted RMS

WSP : 2-D Weighted RMS

WSU : Vertical Weighted RMS

WSX : 3-D Weighted RMS

NSX1 : Factor of Unit Variances per solution, without taking into account the correlations between the estimated parameters

NSX2 : Factor of Unit Variances per solution, taking into account the correlations between the estimated parameters

F : Matrix Scaling Factor

Table 2 : Global Residuals of the VLBI Combination at 1993.0

SIG0 = 0.92

Solution	N	SP cm	SU cm	SX cm	WSP cm	WSU cm	WSX cm	NSX1	NSX2	F
(USNO) 95 R 04	80	2.4	4.1	3.1	0.3	0.4	0.3	0.87	0.94	2.28
(GSFC) 95 R 01	116	1.4	5.7	3.5	0.4	0.5	0.4	0.63	0.84	3.65
(NOAA) 95 R 01	111	0.9	4.1	2.5	0.7	1.1	0.8	0.61	1.19	4.84
(JPL) 95 R 01	6	0.5	1.5	0.9	0.4	1.1	0.7	0.82	0.83	1.50

Table 3 : Global Residuals of the GPS Combination at 1993.0

SIG0 = 0.97

Solution	N	SP cm	SU cm	SX cm	WSP cm	WSU cm	WSX cm	NSX1	NSX2	F
(JPL) 95 P 02	38	0.3	1.2	0.7	0.2	0.8	0.5	1.11	1.01	7.97
(EMR) 95 P 02	25	4.4	5.3	4.7	1.5	3.7	1.6	0.86	1.16	20.46
(CODE) 95 P 02	40	0.9	0.6	0.8	0.6	0.4	0.5	0.92	0.88	0.06

Table 4 : Global Residuals of the SLR Combination at 1993.0

SIG0 = 1.00

	N	SP cm	SU cm	SX cm	WSP cm	WSU cm	WSX cm	NSX1	NSX2	F
(CSR) 95 L 01	76	03.1	9.3	5.9	0.8	1.2	1.2	1.00	1.00	1.61
(DUT) 95 C 02	76	03.2	1.1	2.7	0.5	1.0	0.7	1.00	1.00	1.61

Table 5 : Global Residuals of the DORIS Combination at 1993.0

SIG0 = 1.00

Solution	N	SP cm	SU cm	SX cm	WSP cm	WSU cm	WSX cm	NSX1	NSX2	F
(IGN) 95 D 01	49	2.5	1.9	2.3	1.7	1.5	1.7	0.67	0.85	6.29
(CSR) 95 D 01	47	2.8	2.8	2.8	1.9	1.5	1.7	0.62	0.85	1.75
(GRGS) 95 D 01	47	3.3	2.6	3.1	2.1	2.1	2.2	1.14	1.25	15.73