III. The ITRF97 Data Analysis

The ITRF97 solution is derived with the following properties:

- All the individual matrices were orthogonaly projected using equation (I.5);
- The projected solutions were then propagated at their Epochs of Minimal Position Variance;
- Station velocities are constrained to be the same for all points within each site;
- ITRF97 positions were estimated at epoch 1997.0;
- Transformation parameters from ITRF97 to individual solutions were also estimated at epoch 1997.0 for all solutions.
- The reference frame definition (origin, scale, orientation and time evolution) is achieved in such a way that ITRF97 is in the same system as the ITRF96. The ITRF97/96 alignment was performed using the following 3 steps:

  1. A first combination was done by fixing to ZERO the 14 transformation parameters of the GPS CODE solution (SSC(CODE) 98 P01);
  2. A comparison of the combination of step 1 to ITRF96, estimating 14 transformation parameters. The comparison makes use of the full variance-covarinace of the two matrices.
  3. The final combination (ITRF97) was done by fixing the 14 transformation estimated in step 2 to the GPS CODE solution.