# Table of Contents


## Preface 1

## Table of Contents 3

## International VLBI Service

1 *N. Vandenberg:* **IVS is Established** . . . . . . 6

## Reports from Stations

2 *R. Kilger:* **Status Report of 20m - Radiotelescope - Wettzell** . . . . . . 11

3 *R. Zernecke:* **Seasonal Variations in Height demonstrated at the Radiotelescope Reference Point** . . . . . . 15

4 *H. Hase, L. Petrov:* **The First Campaign of Observations with the VLBI-Module of TIGO** . . . . . . 19

5 *A. Nothnagel:* **Local Survey at the Effelsberg Radio Telescope 1997 - Preliminary Results** . . . . . . 25

6 *W. Alef, R.W. Porcas:* **Observatory Report from Effelsberg** . . . . . . 32

7 *A. Orfei, G. Tuccari, F. Mantovai:* **Medicina and Noto Stations Report** . . . . 33

8 *G. Colucci, F. Vespe, D. Del Rosso, L. Garramone:* **Matera VLBI Station: status report** . . . . . . 38

9 *D. Behrend, A. Rius:* **Geodetic Control of the Madrid DSS65 VLBI Antenna** 42

10 *A. Rius, A. Alberdi, D. Behrend, C. Garcia-Miro, J.A. Perea:* **Radioastronomy at the NASA Madrid Deep Space Communications Complex (MDSCC) - Status Report** . . . . . . 51

11 *F. Colomer, P. de Vicente, M. Rioja:* **Observatorio Astronomico Nacional - Yebes - Status Report** . . . . . . 59

12 *G. Elgered, R. Haas:* **Geodetic Very-Long-Baseline Interferometry at the Onsala Space Observatory 1997 - 1998** . . . . . . 60

13 *H.-P. Plag:* **Measurement of vertical crustal motion in Europe by VLBI: Station report for Ny-Alesund; Norwegian Mapping Authority** . . . . . . 65

14 *A. Mueskens, W. Alef:* **Bonn Correlator Report** . . . . . . 78

15 *T. Kondo, N. Kurihara, Y. Koyama, J. Nakajima, R. Ichikawa, E. Kawai, M. Sekido, T. Yoshino, J. Amagai, T. Sebata, M. Furuya, Y. Takahashi, H. Kiuchi, A. Kaneko:* **Recent VLBI activities at the Communications Research Laboratory, Japan** . . . . . . 80

16 *S. Ogi:* **Status Report of Geographical Survey Institute** . . . . . . 89

## Analysis and Modelling

17 *M. Sorgente, L. Petrov:* **Overview of performance of European VLBI Geodetic Network in the Europe campaigns in 1998** . . . . . . 95

18 *R. Lanotte, C. Ferraro, A. Nardi, C. Sciarretta, F. Vespe:* **The CGS VLBI EUR98 Geodetic Solution and Comparison with the CGS GPS results** . . . . . . 101

19 *R. Haas, A. Nothnagel:* **A two-step approach to analyze European geodetic Very Long Baseline Interferometry (VLBI) data** . . . . . . . . . . . . . . . . 108

20 *K. Boerger:* **A geocentric relativistic VLBI-Model** . . . . . . . . . . . . . . . . . . 115

21 *K. Boerger:* **Comparison of European network solutions** . . . . . . . . . . . . 121

22 *L. Petrov:* **Absolute methods for determination of reference system from VLBI observations.** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 138

23 *L. Petrov:* **Steps towards phase delay VLBI** . . . . . . . . . . . . . . . . . . . . . 144

24 *M. Rioja, P. Tomasi:* **Integrating GPS zenith path-delay measurements into the analysis of geodetic VLBI observations from the European network** 152

25 *L. Gradinarsky:* **Comparison of atmospheric parameters estimated from VLBI, GPS and microwave radiometer data** . . . . . . . . . . . . . . . . . . . . . . 161

26 *D. S. MacMillan, W. E. Himwich, N. R. Vandenberg, C. C. Thomas, J. M. Bosworth, B. Chao, T. A. Clark, C. Ma:* **CORE: Continuous, High-Accuracy Earth Orientation Measurements** . . . . . . . . . . . . . . . . . . . . . . . . . . . . 166

27 *H. Schuh, O. Titov:* **: Short-period variations of the Earth rotation parameters as seen by VLBI** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 172

28 *R. Haas, H.-G. Scherneck:* **The effect of ocean tide loading on the determination of earth rotation parameters** . . . . . . . . . . . . . . . . . . . . . . . . . . 178

29 *O. Titov:* **Tectonic motion of European VLBI sites** . . . . . . . . . . . . . . . . 186

30 *K. Kaniuth:* **Crustal deformations in the Central Mediterranean derived from the WHAT A CAT GPS project** . . . . . . . . . . . . . . . . . . . . . . . 192

31 *E. Gueguen, P. Tomasi:* **Geodynamic interpretation of the Central Mediterranean combining geological and VLBI data.** . . . . . . . . . . . . . . . . . . 198

32 *V. Tornatore, F. Sacerdote, M. Crespi:* **Comparison of deformations resulting from GPS and VLBI data: problems and preliminary results** . . . . . . . 206

33 *P. Charlot, A. L. Fey:* **A Classification of ICRF Sources Based on Observed Structure for Ultra-precise VLBI Astrometry and Geodesy** . . . . . . . . 217

34 *C. Ma, M. Eubanks:* **Extension and Maintenance of the ICRF** . . . . . . . . . . 224

35 *V. Tornatore, C. Stanghellini, Silke Britzen:* **Status report of the project 'EVN observations of radio sources used for geodetic EUROPE experiments'** . 226

36 *M. Rioja, R. Porcas, S. Garrington, A. Alberdi, D. Saikia:* **Relative astrometry and phase-reference mapping in the 1636+473 system using MERLIN and Global VLBI** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 233

37 *W. Alef, A. Benz, J. Conway, M. Pestalozzi, T. Beasley:* **Phase-reference mapping of nearby stars: status report** . . . . . . . . . . . . . . . . . . . . . . . . 241

## New Development and Ideas

38 *A. Whitney:* **Advanced Technology Development in VLBI** . . . . . . . . . . . 249

39 *W. Cannon:* **The Canadian S2-VLBI-System** . . . . . . . . . . . . . . . . . . . . . 260

40 *B. Stoew, C. Rieck:* **Dual Channel Water Vapour Radiometer Development** . 261

41 *W. Schwegmann, H. Schuh:* **On the Automation of the MarkIII Data Analysis System** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 265

42 *H. Hase:* **Phase Centre Determinations at GPS-Satellites with VLBI** . . . . 273

43 *U. Schreiber, M. Schneider, G. E. Stedman, W. Schlueter:* **Characteristics of a Ring Laser for Geodesy** . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 278