

## TABLE OF CONTENTS

<b>PREFACE</b>	<b>vi</b>
<b>LIST OF PARTICIPANTS</b>	<b>vii</b>
<b>SCIENTIFIC PROGRAM</b>	<b>ix</b>
<b>SESSION I: PLANS FOR THE NEW ICRF</b>	<b>1</b>
Ma C.: Progress in the 2nd realization of ICRF . . . . .	3
Charlot P., Fey A. L., Collioud A., Ojha R., Boboltz D.A. et al.: Selecting defining sources for the next ICRF based on source structure . . . . .	8
Boboltz D.A., Fey A.L. & K-Q VLBI Survey Collaboration: Time series analysis of VLBI astrometric source positions at 24-GHz . . . . .	12
Titov O.: Proper motions of reference radio sources . . . . .	16
Bolotin S.: Influence of different strategies in VLBI data analysis on realizations of ICRF . . . . .	20
Sokolova J.R.: Effect of the reference radio source selection on VLBI CRF realization . . . . .	24
Zacharias N., Zacharias M.I., Boboltz D., Fey A., Gaume R. et al.: Extragalactic optical-radio link research at USNO . . . . .	28
Andrei A.H., Assafin M., Barache C., Bouquillon S., Bourda G. et al.: A GAIA oriented analysis of a large sample of quasars . . . . .	32
Bourda G., Charlot P., Porcas R., Garrington S.: A VLBI survey of weak extragalactic radio sources for the alignment of the ICRF and the future GAIA frame . . . . .	36
Fey, A.L., Boboltz, D.A.: Analysis of astrometric position time series for ICRF-2 . . . . .	40
Gontier A.-M., Lambert S.: Stable radio sources and reference frame . . . . .	42
Kurdubov S.L., Skurikhina E.: Source positions time series generation and analysis . . . . .	44
Martinez M.J., Marco F.J., Lopez J.A.: Precessional parameters obtained from biased data of Hipparcos-FK5 proper motions . . . . .	46
Petrachenko W.T., Charlot P., Collioud A., Hobiger T., Niell A.E.E.: A study of VLB 2010 potential for source structure corrections . . . . .	48
Yagudina E.I.: Connecting the dynamical frame to the ICRF by use NEAs observations . . . . .	50
<b>SESSION II: MODELS AND NUMERICAL STANDARDS IN FUNDAMENTAL ASTRONOMY</b>	<b>53</b>
Luzum B., Capitaine N., Fienga A., Folkner, W., Fukushima, T. et al: Current status of the IAU Working Group for Numerical Standards of Fundamental Astronomy . . . . .	55
Soffel M.H., Klioner S.A.: On astronomical constants . . . . .	58
Capitaine N.: Recent progress in concepts, nomenclature and models in fundamental astronomy	61
Pitjeva E.V.: Recent models of the planet motions and fundamental constants determined from position observations of planets and spacecraft . . . . .	65
Fienga A., Manche H., Laskar J., Gastineau M.: INPOP06, a new numerical ephemeris . . . . .	69
Manche H., Bouquillon S., Fienga A., Laskar J., Francou G. et al.: Towards INPOP07, adjustments to LLR data . . . . .	70
Hilton J.L.: Prospects for improving the masses of minor planets . . . . .	74
Kudryavtsev S.M.: Harmonic models of tide-generating potential of the terrestrial planets . . . . .	78
Dehant V., Lambert S., Folgueira M., Koot L., Rambaux N.: Recent advances in modeling precession-nutation . . . . .	82
Yatskiv Ya.S., Korsun' A.A.: IAU Symposium No 78 "Nutation and the Earth's rotation" as a first step in the consideration of the non-rigid Earth nutation theory . . . . .	88
Koot L., Rivoldini A., De Viron O., Dehant V.: Estimation of Earth interior parameters from a bayesian inversion of nutation time series . . . . .	91
Vondrák J., Ron C.: VLBI observations of nutation, its geophysical excitations and determination of some Earth model parameters . . . . .	95
Petrov L.: On observability of the free core nutation . . . . .	99
Lambert S., Dehant V., Gontier A.-M.: Earth's interior with VLBI...and the celestial reference frame? . . . . .	103

Wallace P.T. , Capitaine N.: Concise algorithms for precession-nutation . . . . .	107
Damljanović G. : Better proper motions accuracy for stars with Hipparcos satellite and ground-based observations . . . . .	111
Escapa A., Getino J., Ferrández J.M: Geopotential of a triaxial Earth with a rigid inner core in Andoyer canonical variables . . . . .	113
Folgueira M., Dehant V.: Estimation of the topographic torque at the core-mantle boundary on nutation . . . . .	115
Marco F.J., Lopez J.A., Martinez M.J.: Considerations about some problems on functional parametrical models implementation from a discrete set of data . . . . .	117
Pashkevich V.V.: Non-rigid Earth rotation series . . . . .	119
Tupikova I.V.: Analytical theory for the motion of an asteroid in the gravitational field of a migrating planet . . . . .	121
Zerhouni W., Capitaine N., Francou G.: The use of LLR observations (1969-2006) for the determination of the celestial coordinates of the pole . . . . .	123
<b>SESSION III: RELATIVITY IN FUNDAMENTAL ASTRONOMY</b>	<b>125</b>
Klioner S.A.: Relativity in fundamental astronomy: solved and unsolved problems . . . . .	127
Hestroffer D., Mouret S., Berthier J., Mignard F., Tanga P.: Local tests of GR and reference frames linking with GAIA astrometry of asteroids . . . . .	133
Eroshkin G.I., Pashkevich V.V.: Geodetic relativistic rotation of the solar system bodies . . . . .	135
Klioner S.A., Soffel M.H., Le Poncin-Lafitte C.: Towards the relativistic theory of precession and nutation . . . . .	139
<b>SESSION IV: PREDICTION, COMBINATION AND GEOPHYSICAL INTERPRETATION OF EARTH ORIENTATION PARAMETERS</b>	<b>143</b>
Wooden W.: Activities of the IERS Working Group on prediction . . . . .	145
Altamimi Z., Gambis D., Bizouard C.: Rigorous combination to ensure ITRF and EOP consistency	151
Kosek W., Kalarus M., Niedzielski T.: Forecasting of the Earth orientation parameters - comparison of different algorithms . . . . .	155
Kalarus M., Kosek W., Schuh H.: Current results of the Earth orientation parameters prediction comparison campaign . . . . .	159
Stamatakos N., Luzum B., Wooden W.: Recent improvements in IERS rapid service/prediction center products . . . . .	163
Nothnagel A., Rothacher M., Angermann D., Artz, T., Bökmann, S. et al.: GGOS-D: A German project on the integration of space geodetic techniques . . . . .	167
Štefka V., Pešek I., Vondrák J.: Three-year solution of EOP by combination of results of different space techniques . . . . .	169
Klügel T., Schreiber U., Schlüter , Velikoseltsev A.: Advances in inertial Earth rotation measurements - New data from the Wettzell G ring laser . . . . .	173
Salstein D.A., Nastula J., Quinn K., Macmillan D., Mendes Cerveira P.J.: Atmospheric excitation of Earth rotation/polar motion at high temporal resolution . . . . .	177
Brzeziński A.: On the influence of diurnal atmospheric tides on Earth rotation . . . . .	180
Englich S., Weber R., Schuh H.: Empirical validation of the conventional model for length of day variations due to zonal tides . . . . .	184
Korbacz A. , Brzeziński A., Thomas M.: Geophysical excitation of LOD/UT1 estimated from the output of the global circulation models of the atmosphere - ERA-40 reanalysis and of the ocean - OMCT . . . . .	188
Kudryashova M.V.: Geophysical excitation of diurnal prograde polar motion derived from different OAM and AAM data . . . . .	192
Seoane L., Bizouard C., Gambis D.: Polar motion interpretation using gravimetric observations	196
Wooden W.: Summary of the discussion on the prediction of Earth Orientation Parameters . . .	200
Akimenko Y., Spiridonov E., Tsurkis E.: Estimation of coefficients of differential equations modeling the polar motion . . . . .	202
Bołotina O., Bołotin S., Khoda O., Bizouard Ch.: Combination of different space geodetic techniques: algorithm of parameters estimation . . . . .	204

Chapanov Ya., Gambis D.: Correlation between the solar activity cycles and the Earth rotation	206
Chapanov Ya., Ron C., Vondrák J.: Estimation of the short-term zonal tides from UT1 obser-	
vations . . . . .	208
Gambis D., Richard J.Y., Salstein D.: Use of atmospheric angular momentum for UT1 predictions	210
Gross R. S., De Viron O., van Dam T.: The impact on EOP predictions of AAM forecasts from	
the ECMWF and NCEP . . . . .	212
Haas R., Wagner J., Ritakari J., Mujunen A., Sekido M. et al.: Report on the Fennoscandian-	
Japanese project for near real-time UT1-observations with e-VLBI . . . . .	214
Masaki Y.: Meteorological interpretation of transient LOD changes . . . . .	216
Morcov G.: The polar motion and the draconitic period . . . . .	218
Nastula J., Kolaczek B., Salstein, D.A.: Comparison of hydrological and GRACE-based excita-	
tion functions of polar motion in the seasonal spectral band . . . . .	220
Niedzielski T., Kosek W.: Forecasting irregular variations of UT1-UTC and LOD data caused	
by ENSO . . . . .	222
Rzeszótko A., Kosek W., Popiński W.: The influence of variable amplitudes and phases of the	
most energetic oscillations in the EOP on their prediction errors . . . . .	224
Varga P., Bus Z., Süle B., Bizouard Ch., Gambis D. et al.: Correspondence of EOP and geo-	
magnetic field . . . . .	226
Wang W.-J., Shen W.-B., Zhang H.-W.: Verifications for multiple solutions of Earth rotation .	228
<b>POSTFACE</b>	<b>231</b>