

Vol. 4, No. 4 (148) PRAGUE 2007

ACTA GEODYNAMICA ET GEOMATERIALIA

Published by

the Institute of Rock Structure and Mechanics of the Academy of Sciences of the Czech Republic, v. v. i.

Editor-in-Chief

ZDEŇKA SCHENKOVÁ

E-mail zdschenk@irsm.cas.cz Phone +420-266 009 337

Executive Editor

FRANTIŠEK KOLÁŘ

E-mail kolar@irsm.cas.cz **Phone** +420-266 009 343 +420-266 009 258

Editorial Board:

PETER BANKWITZ (Potsdam, Germany)
CORNELIUS GILLEN (Edinburgh, United Kingdom)
OTA KULHANEK (Uppsala, Sweden)
BARBARA KWIECINSKA (Kraków, Poland)
GÜNTER LEYDECKER (Hannover, Germany)
ANATOLIY N. NIKITIN (Dubna, Russia)
HERWIG PETERLIK (Vienna, Austria)

BRIAN RAND (Leeds, United Kingdom)
VLADIMÍR RUDAJEV (Prague, Czech Republic)
IVANA SÝKOROVÁ (Prague, Czech Republic)
JIŘINA TRČKOVÁ (Prague, Czech Republic)
GEORGE STAVRAKAKIS (Athens, Greece)
MARTIN ŠŤASTNÝ (Prague, Czech Republic)
WACŁAW ZUBEREK (Sosnowiec, Poland)

Editorial Office:

Secretary: JINDŘIŠKA NETRESTOVÁ

Address: IRSM AS CR, V Holešovičkách 41 182 09 Prague 8, Czech Republic

Phone: +420-266 009 111

Fax: +420-284 686 645, +420-284 680 105

E-mail: irsm@irsm.cas.cz http://www.irsm.cas.cz

PREFACE

The Institute of Geodesy and Geoinformatics of the Wroclaw University of Environmental and Life Sciences in the collaboration with the Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic, v.v.i. organized the 8th Czech – Polish Workshop on *Recent Geodynamics of the Sudety Mts. and Adjacent Areas* in Klodzko (Poland) on March 29-31, 2007. The workshop held under the auspices the Section of the Geodynamics of the Committee of Geodesy, Polish Academy of Sciences and the Czech Centre for Earth Dynamic Research. Fifty-five participants from twenty-four Czech, Polish and Slovak research institutions and universities attended the Workshop. The scientific programme of the 8th Workshop proceeded topics of seven previous Workshops organized in 1998, 2000, 2001, 2002, 2003, 2004 and 2005 (special issues of Exploration Geophysics, Remote Sensing and Environment 6, No. 2, 1999; Reports on Geodesy No. 7(53), 200; Acta Montana, Series A, No. 20(124), 2002, No. 24(131), 2003; Acta geodynamica et geomaterialia (formerly Acta Montana, Series A) 1, No. 3(135), 2004, Acta geodynamica et geomaterialia 2, No. 3(139), 2005 and Acta geodynamica et geomaterialia 3., No. 3(143) 2006.

The programme of the 8th Workshop was divided into six sections: tectonics and geodynamic interpretations, epoch and permanent GPS measurements, geodynamic networks, seismological investigations, monitoring and processing geodetic data, and geophysical investigations.

A total of forty-two contributions were presented and a lot of them had an interdisciplinary character. Delivered contributions allowed a broad community of geologists, geophysicists and geodesists a fruitful exchange of knowledge and formulating aims of new national and/or international projects. This special issue of Acta geodynamica et geomaterialia contains twenty-three papers.

The field session consisting of three stops (the typical mining town Zloty Stok with the exhibits in the old mine Getruda, the Sudetic Marginal Fault near Zloty Stok and Klodzko) was included into the programme.

The organizers wish to express their satisfaction that also the 8th Workshop met with such great response among geo-scientists being interested in this area. Their warm thanks go to all participants of the Workshop, to all authors, who submitted their contributions for a presentation in this way, and to all reviewers. Particular thanks are due to the Institute of Rock Structure and Mechanics, Academy of Sciences of the Czech Republic for printing this special issue of Acta geodynamica et geomaterialia. The supports of the Section of the Geodynamics of the Committee of Geodesy, Polish Academy of Sciences and the Ministry of Education, Youth and Sport of the Czech Republic (Centre for Earth Dynamic Research – project LC506 and the project of the Central European Initiative 1P05ME781) are highly appreciated and acknowledged.

Prague, November 2007

Zdeňka SCHENKOVÁ and Vladimír SCHENK, Editors of this special issue

CONTENTS

| Z. Schenková and V. Schenk: PREFACE | |
|---|-------|
| J. Badura, W. Zuchiewicz, P. Štěpančíková, B. Przybylski, B. Kontny and S. Cacoń: THE SUDETIC MARGINAL FAULT: A YOUNG MORPHOPHOTECTONIC FEATURE AT THE NE MARGIN OF THE BOHEMIAN MASSIF, CENTRAL EUROPE | 7- |
| J. Wojewoda: NEOTECTONIC ASPECT OF THE INTRASUDETIC SHEAR ZONE | 31- |
| Z. Kaláb, J. Knejzlík and K. Holub: DECADE OF SEISMOLOGICAL OBSERVATIONS IN THE NORTHERN PART OF MORAVO-SILESIAN REGION | 43- |
| V. Nehybka and R. Tilšarová: SEISMIC ACTIVITY IN WEST BOHEMIA FROM 2001 – 2006 | 51- |
| V. Stejskal, L. Skalský and L. Kašpárek: RESULTS OF TWO-YEARS' SEISMO-HYDROLOGICAL MONITORING IN THE AREA OF THE HRONOV-POŘÍČÍ FAULT ZONE, WESTERN SUDETES. | 59- |
| L. Staš, K. Souček and J. Knejzlík: FIRST RESULTS OF CONICAL BOREHOLE STRAIN GAUGE PROBES APPLIED TO INDUCED ROCK MASS STRESS CHANGES MEASUREMENT | 77- |
| R. Mydlikowski, G. Beziuk and A. Szynkiewicz: DETECTION OF INHOMOGENEITIES IN STRUCTURE OF FLOOD EMBANKMENTS BY MEANS OF D.C. RESISTIVITY, GPR AND FREQUENCY ELECTROMAGNETIC METHOD MEASUREMENTS – SHORT NOTE | 83- |
| G. Beziuk and R. Mydlikowski: DETERMINATION OF NEAR-SURFACE APPARENT RESISTIVITY BY MEANS OF HIGH FREQUENCY MUTUAL IMPEDANCE MEASUREMENTS | 89- |
| M. Łój, J. Madej, S. Porzucek and W. Zuchiewicz: PERIODIC GRAVITY CHANGES IN THE YOUNG TECTONIC MOVEMENT INVESTIGATION OF SELECTED AREA IN THE POLISH WESTERN CARPATHIANS | 97-1 |
| M. Kaczorowski: PRELIMINARY RESULTS OF INVESTIGATIONS OF LONG LASTING NON-TIDAL SIGNALS OBSERVED BY MEANS OF HORIZONTAL PENDULUMS AND LONG WATER TUBE TILTMETERS IN LOW SILESIAN GEODYNAMIC LABORATORY OF POLISH ACADEMY OF SCIENCES IN KSIAZ | 109-1 |
| J. Vondrák and C. Ron: QUASI-DIURNAL ATMOSPHERIC AND OCEANIC EXCITATION OF NUTATION | 121-1 |
| V. Štefka and I. Pešek: IMPLEMENTATION OF THE VONDRAK'S SMOOTHING IN THE COMBINATION OF RESULTS OF DIFFERENT SPACE GEODESY TECHNIQUES | 129-1 |
| P. Banasik: QUASIGEOID ON CHOSE AREAS OF INVESTIGATIONS GEODYNAMICS | 133- |
| M. Figurski, M. Galuszkiewicz, P. Kamiński and K. Kroszczyński: MESOSCALE FUNCTIONS OF GPS SLANT DELAY | 141- |
| W. Rohm and J. Bosy: THE QUALITY OF METEOROLOGICAL OBSERVATIONS AND TROPOSPHERIC DELAY FROM EPN/IGS PERMANENT STATIONS LOCATED IN THE SUDETY MOUNTAINS AND IN THE ADJACENT AREAS | 145- |
| M. Grácová, F. Mantlík, V. Schenk and Z. Schenková: DATA PROCESSING OF GNSS OBSERVATIONS OF THE GEONAS NETWORK - EFFECTS OF EXTREME METEOROLOGICAL CONDITIONS | 153- |
| D. Jasiurkowski: SOME PRACTICAL PROCEDURES FOR USE WHEN PREPARING DATA FOR GPS VECTOR SOLUTIONS TIME SERIES ANALYSIS | 163- |
| J. Kudrys: AUTOMATIC DETERMINATION OF VERTICAL DEFLECTION COMPONENTS FROM GPS AND ZENITHAL STAR OBSERVATIONS | 169-1 |
| J. Hefty: GEO-KINEMATICS OF CENTRAL AND SOUTH-EAST EUROPE RESULTING FROM COMBINATION OF VARIOUS REGIONAL GPS VELOCITY FIELDS | 173-1 |
| M. Figurski, K. Kroszczyński, P. Kamiński and M. Gałuszkiewicz: MONITORING OF PERMANENT GPS STATIONS AT THE SUDETY MOUNTAINS | 191-2 |
| O. Švábenský and J. Weigel: LONG-TERM POSITIONAL MONITORING OF STATION VYHL OF THE SNĚŽNÍK NETWORK | 201-2 |
| Z. Schenková, V. Schenk, F. Mantlík and M. Grácová: REGIONAL GEODYNAMIC NETWORK HIGHLANDS, THE BOHEMIAN MASSIF | 207-2 |
| Z. Szczerbowski: THE EVALUATION OF SALT DOME VERTICAL MOVEMENTS IN INOWROCŁAW DETECTED BY CLASSICAL PRECISE LEVELLING AND GPS SURVEYING TECHNIQUES | 217-2 |