

IMEKO XVIII World Congress 報告

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Report of IMEKO XVIII World Congress

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IMEKO XVIII World Congressは2006年にRio de Janeiroリオデジャネイロで開催された。副題はMetrology for a Sustainable Developmentである。(IMEKOはInternational Measurement ConfederationのLatinラテン語表記の略称である。) MII関係者としては筆者の2名が参加した。

会議の期間は9月17日(月)から22日(金)までの6日間であり、会場はHotel Inter-Continental Rio ホテル・インターコンチネンタル・リオのConvention Centerであった。会場のホテルの位置はRio de Janeiroの中心から直線距離で12km位の所のPraia de São Conrado サン・コンハード海岸の直ぐ側である。会場のホテルの入り口をFig.1に、付近の海岸をFig.2に示す。

分野別の報告件数をTable 1に示す。医用関係はTC (technical committee) 13のmeasurements in biology and medicineで31件あり全報告件数529件の5.86%程度である。TC-13で



Fig.1 会議場のホテルの入り口。

Table 1 分野別の報告件数。

Topics	名 称	件 数		
		Oral	Poster	計
TC 1	Education and training in measurement and instrumentation	10	4	14
TC 2	Photonics	10(4)	0	10(4)
TC 3	Measurement of force, mass and torque	36(7)	30(1)	66(8)
TC 4	Measurement of electrical quantities	56	24	80
TC 5	Hardness measurement	19(4)	0	19(4)
TC 7	Measurement science	33	0	33
TC 8	Traceability in metrology	15(1)	13	28(1)
TC 9	Flow measurement	16	7	23
TC 10	Technical diagnostics	14	4	18
TC 11	Metrological infrastructures	11	4	15
TC 12	Temperature and thermal measurements	22(2)	7	29(2)
TC 13	Measurement in biology and medicine	15(2)	16	31(2)
TC 14	Measurement of geometrical quantities	36(4)	12	48(4)
TC 15	Experimental mechanics	0	6	6
TC 16	Pressure and vacuum measurement	10(1)	3	13(1)
TC 17	Measurement in robotics	6	0	6
TC 18	Measurement of human functions	8(3)	0	8(3)
TC 19	Environmental measurement	15(3)	10	25(3)
TC 20	Measurement techniques for the construction industry	4	0	4
TC 21	Mathematical tools in measurement	13	12	25
TC 22	Vibration measurement	15	0	15
IWADC	International workshop on ADC modelling and testing	10	3	13
合 計		374(31)	155(1)	529(32)

注1) TC: Technical committee. 注2) TC 6は留保. 注3) IWADCはparallel meeting. 注4) ()内は内数で示した日本からの発表件数.

の報告を Table 2 に示す。

小島克之はTC7 Measurement scienceのSession 3とSession 5のchairpersonを、蔡篤儀はTC13 Measurement in biology and medicineのSession 1 Medicine applicationsのchairpersonを務めた。

各TCごとのmeetingやround table discussionも行われた。

参加者の正確な人数や国別内訳はわからないが、およそ850名の参加者があった。日本からは最も遠い国であるせいか、あるいはvisaを必要とするせいか、今までのIMEKOよりは日本からの参加者が少なかった。

Plenary sessionとしてTable 3に示す11の講演があった。

Poster presentationの状況をFig.3に、exhibitionの状況をFig.4に示す。

Fig.5にregistrationの、Fig.6にopening ceremonyのそれぞれの様子を示す。

会議に伴う行事としてはopening (welcoming) cocktailがあり、Rio de Janeiro名物のsamba showが行われた。その様子をFig.7に示す。

Tourist tourとしてMorro de Corcovado コルコバードの丘とPão de Açúcarパン・ジ・アスカーへの訪問が実施された。筆者らはMorro de Corcovadoへ行った。海拔709mの絶壁の頂に立つChristキリスト像はRio de Janeiro観光のシンボルでありご存じの方も多であろう。Morro de Corcovado

から見たRio de Janeiroの市街をFig.8に示す。

また、Lagoa Rodrigo de Freitas ロドリゴ・デ・フレイタス湖畔にあるレストランでdinnerがあり、多くの研究者との交流を深めることができた (Fig.9)。

今回はtechnical visitは実施されなかった。Proceedingは本論文のCD-ROMとsummaryの1冊の本が発行された。コンピューターも用意されており、各自が自由に使うことができた。

XIXは次のような予定になっている。

XIX: Lisbon リスボン, Portugal ポルトガル 2009年

URL <http://www.imeko.org/>

また、関連した国際会議として以下のものが予定されている。

Measurement 2007: Smolenice Castle, Slovakia スロバキア
2007年5月20日(日)~24日(木)

URL <http://www.measurement.sk/M2007/>

(IMEKO TC1 Education and training in measurement and instrumentationとTC13 Measurement in biology and medicineがスポンサー)

Joint International IMEKO TC1+TC7 Symposium 2008:Annecy
アヌシー, France フランス

2008年9月3日(水)~5日(金)

URL <http://www.liuc.it/imekotc7/>

Table 2(a) TC 13 Measurements in biology and medicine での報告 (続く)。

TC13 Measurement in biology and medicine	
Thursday, September 21 – TOPÁZIO ROOM	
ORAL PRESENTATIONS	
SESSION 1: MEDICINE APPLICATIONS	
CHAIRPERSONS: Peter Kneppo, Du-Yih Tsai	
10h40min	OPENING CEREMONY TC13
11h00min	TC13-1 COMPUTER SIMULATION OF THE RESPIRATORY SYSTEM IN FORCED EXPIRATION Bárbara J Uroszek, Jan Stanislawski
11h20min	TC13-2 SIMPLE METHOD TO ENHANCE CT BRAIN IMAGES FOR USE IN DIAGNOSIS OF ACUTE CEREBRAL ARTERY INFARCTION Du-Yih Tsai, Noriyuki Takahashi, Yongbum Lee, Katsuyuki Kojima
11h40min	TC13-3 A PC-CONTROLLED REFLECTOMETER FOR FUNCTIONAL IMAGING OF OCULAR FUNDUS Matteo Bonalutti, Luigi Rovati and Charles Riva
12h00min	TC13-4 MULTICHANNEL ECG MEASUREMENT FOR NONINVASIVE IDENTIFICATION OF HEART REGIONS WITH CHANGED REPOLARIZATION Milan Tysler, Vladimir Rosik, Peter Kneppo
SESSION 2: MEDICINE AND BIOLOGY I	
CHAIRPERSONS: Jukka Lekkala, Stanislaw Osowski	
14h00min	TC13-5 ENSEMBLE OF NEURAL NETWORKS FOR IMPROVED RECOGNITION AND CLASSIFICATION OF ARRHYTHMIA S. Osowski, T. Markiewicz, L. Tran Hoai
14h20min	TC13-6 3D LUNGS SURFACE RECONSTRUCTION FROM COMPUTED TOMOGRAPHY IMAGES Tomasz Koszmider, Krzysztof Strzecha
14h40min	TC13-7 PRESSURE MAPPING SYSTEM FOR PHYSIOLOGICAL MEASUREMENTS Satu Kärki, Jukka Lekkala
15h00min	TC13-8 ABOUT SOME METROLOGICAL ASPECTS OF STANDARDIZATION IN SPIROMETRY Bárbara Juroszek
15h20min	TC13-9 FORCE CALIBRATION OF MICRO PIPETTES FOR SINGLE-CELL PROBING Erwin Peiner, Lutz Doering, Uwe Brand, Andreas Christ, Gerrit Isenberg, Michael Balke
15h40min	TC13-10 PIEZORESISTIVE DIAMOND-LIKE CARBON MICRO STRAIN GAUGES Erwin Peiner, Arti Tibrewala, Holger Lüthje, Ralf Bandorf, Saskia Bieh, Lutz Doering
SESSION 3: MEDICINE AND BIOLOGY II	
CHAIRPERSONS: Mário A.T. Figueiredo, Paulo J. P. de Freitas	
16h30min	TC13-11 HOLLOW BEAM GEOMETRY FOR DIFFUSING TEMPORAL LIGHT CORRELATION Luigi Rovati, Nicola Zambelli, Stefano Cattini and Giorgia Salvatori
16h50min	TC13-12 MICROSYSTEM FOR BIOLOGICAL ANALYSIS BASED ON MAGNETORESISTIVE SENSING Germano, M. S. Piedade, L. Sousa, T. M. Almeida, P. Lopes, F. A. Cardoso, H. A. Ferreira, P. P. Freitas
17h10min	TC13-13 NORMALIZED MODEL SYSTEM FOR THE STUDY OF TERMITE MANAGEMENT R. Tykva, R. Hanus, J. Jakubek, Z. Wimmer, J. Novák, V. Vlasáková
17h30min	TC13-14 DISTRIBUTED VIRTUAL SYSTEM FOR DOLPHINS' SOUND ACQUISITION AND TIMEFREQUENCY ANALYSIS Octavian Postolache, Pedro Silva Girão, Miguel Dias Pereira, Mário Figueiredo
17h50min	TC13-15 EMERGING TRENDS IN FOOD AND NUTRITIONAL METROLOGY Venkatesh Iyengar



Fig.2 ホテル付近の海岸.



Fig.3 Poster presentation.

Table 2(b) TC 13 Measurements in biology and medicine での報告.

Friday, September 22 – QUARTZO A ROOM	
POSTER SESSION: 10h40min - 12h20min	
TC13-16	SINGLE AND MULTIPLE LIGHT SCATTERING IN ERYTHROCYTE MODELLING Janusz Mroczka, Tomasz Wojtaszek, Dariusz Wysocki
TC13-17	CONCEPTION OF A LOW-COST RECORDER FOR THE HEART RATE VARIABILITY STUDY IN THE ATHLETE T. André, B. De Schryver, M. Francaux, P. Sente, C. Eugène
TC13-18	METROLOGICAL RELIABILITY OF HIGH FREQUENCY SURGICAL EQUIPMENT Rosário P A Palomares, Paula M P Gouvêa, Elisabeth Costa Monteiro
TC13-19	PROPOSAL OF A NEW METHOD FOR ASSESSING THE AMBIENT DOSE EQUIVALENT, WHICH ACCOUNTS FOR THE INFLUENCE OF THE HIGH VOLTAGE IN A MEDICAL X RAY FACILITY Elton Gomes Pereira
TC13-20	OSCILLOMETRIC VIRTUAL INSTRUMENT FOR BLOOD PRESSURE MEASUREMENT Gregor Geršak, Valentin Batagelj, Janko Drnovšek
TC13-21	TITANIUM OXIDE FILMS PRODUCED BY MICRO-ARC OXIDATION FOR HIGH PERFORMANCE TITANIUM IMPLANTS J.T. Filho, L.R. Lidizio, L.A. Sena, J.C. Damasceno and C.A. Achete
TC13-22	OPTIMIZATION OF A NOVEL MAGNETIC NANOPARTICLE SENSOR Jarkko Mäkiranta, Jukka Leikkaala
TC13-23	NON-LINEAR FIT OF A 6 SKEWED GAUSSIAN TEMPLATE FOR FILTERING, COMPRESSION AND CLINICAL IDENTIFICATION OF THE ECG USING A DSP WIRELESS SETUP Luís Pina Soares, Raul Carneiro Martins
TC13-24	PRIMARY LEVEL ULTRASONIC OUTPUT POWER MEASUREMENT AT LABORATORY OF ULTRASOUND OF INMETRO Marissa A. Rivera Cardona, André Victor Alvarenga, Rodrigo P. B. da Costa-Felix
TC13-25	THE BRAZILIAN NATIONAL LABORATORY OF ULTRASOUND Rodrigo P. B. da Costa-Felix, André Victor Alvarenga, Marissa A. Rivera Cardona
TC13-26	INFLUENCE OF A MAGNETIC FIELD ON LIVING TISSUE Vaclav Papez, Stanislava Papezova
TC13-27	TWO DIMENSIONAL PHOTOLUMINESCENCE IMAGING OF FOOD FOR NON-DESTRUCTIVE QUALITY CONTROL T. Katsumata, H. Aizawa, Y. Kakinuma, E. Matashige, S. Komuro, T. Morikawa
TC13-28	MAGNETORESISTIVE BIOSENSOR MODELLING FOR BIOMOLECULAR RECOGNITION T. M. Almeida, M. S. Piedade, P. C. Lopes L. Sousa, J. Germano, F. Cardoso, H. A. Ferreira, P. P. Freitas
TC13-29	INTRODUCTION TO RESPIRATORY MECHANICS MEASUREMENT BY ENHANCED INTERRUPTER METHOD Ireneusz Jablonski, Janusz Mroczka
TC13-30	MEASUREMENT – MODELING, MODELING – MEASUREMENT: A TRANSITIVE COUPLE OF REALITY AND ABSTRACTION IN EQUIPAGE OF COMPREHENSION AND PREDICTION FOR EXAMPLE OF BREATHING CONTROL Ireneusz Jablonski, Janusz Mroczka
TC13-31	CHARACTERIZATION OF A MAGNETIC FIELD TRANSDUCER BASED ON THE GMI EFFECT Flávia Pompéia, Luiz A. P. Gusmão, Carlos R. Hall Barbosa, Elisabeth Costa Monteiro, Lidice A. P. Gonsalves, Fernando L. A. Machado
Friday, September 22, 14h00min: MONSEIGNER ROOM – TC13 MEMBERS MEETING	



Fig.4 Exhibition.



Fig.5 Registration.

Table 3 Plenary session の特別講演.



Plenary Sessions	
Sunday, September 17	
18h00min	PLENARY 1: METROLOGY FOR A SUSTAINABLE DEVELOPMENT Dr. Humberto Stiqueira Brandi
Monday, September 18	
08h30min	PLENARY 2: THE GUM AND THE METHOD OF MONTE CARLO Dr. Walter Bich
09h20min	PLENARY 3: IT INTEGRATION IN METROLOGY Dr. Dieter Richter
Tuesday, September 19	
08h30min	PLENARY 4: METROLOGY IN CHEMISTRY Dr. Paul de Bièvre
09h20min	PLENARY 5: CHEMISTRY AND ENVIRONMENTAL METROLOGY Dr. Robert Kaarls
Wednesday, September 20	
08h30min	PLENARY 6: NEW DEFINITION OF THE KELVIN Dr. Wolfgang Buck
09h20min	PLENARY 7: THE WORLD OF SUBSECOND THERMOPHYSICS Dr. Francesco Righini
Thursday, September 21	
08h30min	PLENARY 8: MATERIALS METROLOGY FROM MACRO TO NON-SCALE, THE NEW FACILITIES AT INMETRO Dr. Carlos Alberto Achete
09h20min	PLENARY 9: INFORMATION PROCESSING OF BIOMEDICAL SENSOR SIGNATURES FOR ENSURING THE QUALITY OF LIFE Dr. Dieter Barschdorff
Friday, September 22	
08h30min	PLENARY 10: NEEDS AND ADVANCES IN METROLOGY FOR PRECISION MOTION CONTROL IN MECHATRONICS Dr. Robert J. Hocken
09h20min	PLENARY 11: FUTURE DEVELOPMENTS IN NON-GOVERNMENTAL COOPERATION IN MEASUREMENTS AND INSTRUMENTATION Dr. Leo Van Biesen



Fig.6 Opening ceremony.



Fig.7 Opening(welcoming) cocktail での samba show.



Fig.8 Morro de Corcovado から見た Rio de Janeiro の市街.



Fig.9 Dinner.