2018 IEEE International Symposium on Medical Measurements and Applications (MeMeA 2018)

Rome, Italy 11-13 June 2018

Pages 1-551



IEEE Catalog Number: ISBN:

CFP18MEA-POD 978-1-5386-3393-9

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 IEEE Catalog Number:
 CFP18MEA-POD

 ISBN (Print-On-Demand):
 978-1-5386-3393-9

 ISBN (Online):
 978-1-5386-3392-2

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11:15 – 12:55 T1.1: Sensors and transducers for medical systems (I) Room: Sala del Chiostro
Influence of the length of lead lines on the response of a variable orifice meter: analysis of sensitivity and settling time
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Intelligent Multi-Electrode Arrays as the Next Generation of Electrochemical Biosensors for Real-Time Analysis of Neurotransmitters
Cardiac Hemodynamic Monitoring in the Subcutaneous Space - A pre-clinical proof-of-concept
A Real-Time Algorithm to Detect Falls in the Elderly

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An Approach to digitalize Psychological Tests to support Diagnosis of Alzheimer's Disease in Ambulatory Care163 Markus Schinle (FZI Research Center for Information Technology, Germany) Daniel Wyszka (FZI Research Center for Information Technology, Germany) Frank Schwärzler (PP.rt Clinic for Psychiatry and Psychosomatics, Germany) Kirsten Volz (PP.rt Clinic for Psychiatry and Psychosomatics, Germany) Marie-Anne Ruby (PP.rt Clinic for Psychiatry and Psychosomatics, Germany) Emir Sejdinovic (PP.rt Clinic for Psychiatry and Psychosomatics, Germany) Wilhelm Stork (Karlsruhe Institute of Technology, Germany)

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18: An Electric-Field Based Breathing Rate Monitor
19: Calibration System Established at TÜBİTAK UME for Infrared Ear Thermometers (IRETs)
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Ambient assisted living for tetraplegic people by means of an electronic system based on a novel sensory headwear 447 Vito Errico (University of Rome "Tor Vergata", Italy) Mariachiara Ricci (University of Rome "Tor Vergata", Italy) Antonio Pallotti (University of Rome "Tor Vergata", Italy) Franco Giannini (University of Rome "Tor Vergata", Italy) Giovanni Saggio (University of Rome "Tor Vergata", Italy)
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Dry Electrode Optimization for Wrist-based Electrodermal Activity Monitoring
Electrodermal Activity based Classification of Induced Stress in a Controlled Setting

9:30 – 11:10 T5.3: Measurements for biotechnology, physiology and biomechanics (III) Room: Saletta del Chiostro
Electrochemical measurements to predict the antifungal properties of nanostructured thin films
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EER Calculation and DET Approximation in a Multi-Threshold Biometric System
Measuring the X-MET's maximum power:A preliminary study. Simona Pisu (University of Rome, La Sapienza, Italy); Ludovica Apa (University of Rome, La Sapienza, Italy) Marianna Cosentino (University of Rome, La Sapienza, Italy) Antonio Musarò (University of Rome, La Sapienza, Italy) Emanuele Rizzuto (University of Rome, La Sapienza, Italy) Zaccaria Del Prete (University of Rome, La Sapienza, Italy)

9:30 – 11:10 SS4: Special Session: Minimally Invasive Measurement Systems for Surgical Applications Room: Aula Multimediale
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Non-invasive MR thermometry in liver undergoing laser ablation: multi-parameters analysis
Experimental Analysis of the Influencing Factors on the Response of a Tool for Epidural Space Detection
Impact on outcome and healthcare costs from hemodynamic optimization in patients undergoing pancreatic surgery: a preliminary report
In vivo image-guided MR thermometry during laser ablation: experience in kidney and liver

9:30 - 11:10

Room: Aula 1
A Deep Learning Strategy for Vision-Based Evaluation on the Effect of Nanoparticles Exposure
An Improved Approach for Computer-Aided Diagnosis of Breast Cancer in Digital Mammography
A Multi-label Architecture for Vision-based Measurement of Intervals of Pain
Deep Convolutional Pixel-wise Labeling for Skin Lesion Image Segmentation
Sensitivity Comparison of a Cambered Magnetic Induction Tomography for Local Hemorrhage Detection542 Zhili Xiao (Tianjin University, P.R. China) Chao Tan (Tianjin University, P.R. China) Feng Dong (Tianjin University, P.R. China)

11:30 – 13:10 T11.2: Wearable physiology and activity monitor (II) Room: Sala del Chiostro
Passive Capacitive ECG Sensing: Assessment of Signal Quality During Different Types of Body Movement547 Jens Kirchner (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany) Sebastian Pfeiffer (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany) Georg Fischer (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany)
Ambulatory monitoring of respiratory effort using a clothing-adhered biosensor
A Flexible Front-End for Wearable Electrochemical Sensing Ivan Ny Hanitra (EPFL, Switzerland) Lucia Lobello (Politecnico di Torino, Italy) Francesca Stradolini (EPFL, Switzerland) Abuduwaili Tuoheti (Politecnico di Torino, Italy) Francesca Criscuolo (EPFL, Switzerland) Tugba Kilic (EPFL, Switzerland) Danilo Demarchi (Politecnico di Torino, Italy) Sandro Carrara (EPFL, Switzerland) Giovanni De Micheli (EPFL, Switzerland)
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Influence of Installing Method on Pulse Wave Signal in Blood Pressure Prediction by FBG Sensor

11:30 – 13:10 T8: Patient safety Room: Saletta del Chiostro
A new method to evaluate the average absorbed dose in mammography and breast tomosynthesis
Subject-specific knee SAR prediction using a degenerate birdcage at 7T Vito Gagliardi (IRCCS Stella Maris Foundation, Italy) Gianluigi Tiberi (Fondazione Imago 7, Italy) Laura Biagi (Stella Maris Scientific Institute, Pisa, Italy) Mark Symms (General Electric ASL Scientist (EMEA), Pisa, Italy) Alessandra Retico (Istituto Nazionale di Fisica Nucleare, Italy) Giacomo Aringhieri (University of Pisa, Italy) Virna Zampa (University of Pisa, Italy) Michela Tosetti (IRCCS Fondazione Stella Maris, Italy)
Neuro-fuzzy models to predict the required propofol amount for loss of consciousness during general anesthesia: A preliminary study
Development of a high performance oxygen sensor operating at room temperature
Can the Perception of Risk Be Decreased among Caregivers during Anesthesia Delivery?

11:30 – 13:10 SS3: Special Session: Industrial track Room: Aula Multimediale
RF Co-existence Testing for IoT wireless medical devices Chris Kelly (Keysight Technologies Inc., USA); Kah-Meng Chew (Keysight Technologies Inc., Malaysia)
A Conceptual Framework for Developing an Implantable Research Platform: A Multimodality Approach to Stimulating and Recording
Precision Medicine: Integrating Medical Images, Design Tools and 3D Printing to Create Personalized Medical Solutions
Analisys of Measurement Methods for Static Magnetic Field Uniformity Assessment in Clinical Magnetic Resonance Imaging
Intelligent Pipetting System Towards Automatic Liquid Handling Applications

11:30 – 13:10 T6.2: Measurements in medical imaging (II) Room: Aula 1
Quantitative Motion Analysis Of The Uterus By Optical Flow And Two-dimensional Strain Mapping
Eulerian Magnification of Multi-Modal RGB-D Video for Heart Rate Estimation
On the Accuracy of Denoising Algorithms in Medical Imaging: A Case Study
Clinical Kidney Volume Measurement Accuracy Using NEFROVOL Lise Chagot (Núcleo de Ingeniería Biomedica, France) Diego Tobal (Universidad de la Republica, Uruguay) Florencia Peirano (Universidad de la Republica, Uruguay) Rodrigo Sarantes (Universidad de la Republica, Uruguay) Soledad Ferrari (Universidad de la Republica, Uruguay) Silvia Diaz (Núcleo de Ingeniería Biomedica, Uruguay) Oscar Noboa (Universidad de la Republica, Uruguay) Franco Simini (Universidad de la Republica, Uruguay)
Design and Experimental Test of a Microwave System for Quantitative Biomedical Imaging

14:45 – 16:25 T1.4: Sensors and transducers for medical systems (IV) Room: Sala del Chiostro
Reflectance Pulse Oximetry for Blood Oxygen Saturation Measurement from Diverse Locations - A Preliminary Analysis
Non-Invasive Assessment of Local Pulse Wave Velocity as Function of Arterial Pressure
Measurement of Arterial Young's Elastic Modulus using ARTSENS Pen Raj Kiran V (IIT Madras, India) Nabeel PM (IIT Madras, India) Jayaraj Joseph (IIT Madras, India) Malay Ilesh Shah (IIT Madras, India) Mohanasankar Sivaprakasam (IIT Madras, India)
Computerized assessment of shunt and Ventilation-Perfusion mismatch in oxygen dependent infants
Vascular Wall Stiffness Indices Detection Using an Accelerometer-Based System

SS7.1: Special Session: Tools for objectification and measurement in psychiatry, psychology and clinical neuroscience (I) Room: Saletta del Chiostro
ROOM: Saletta del Chiostro
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A Rasch analysis of Raven's Colored Progressive Matrices to assess eductive intelligence: A study in a Sardinian sample
Scaffolding in teacher-student interaction: an operationalization for evaluation in educational and clinical settings
Chiara Diaferia (University of Parma, Italy) Vanessa Artoni (Tice. Live and Learn Piacenza, Italy Dolores Rollo (University of Parma, Italy)
Validity of digital Trail Making Test and Bells Test in elderlies Francesca Lunardini (Politecnico di Milano, Italy) Matteo Luperto (Università degli Studi di Milano, Italy) Katia Daniele (Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico, Italy) Nicola Basilico (University of Milan, Italy) Carlo Abbate (Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico, Italy) Sarah Damanti (Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico, Italy) Daniela Mari (Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico, Italy) Matteo Cesari (Fondazione IRCCS Cà Granda – Ospedale Maggiore Policlinico, Italy) Nunzio Alberto Borghese (University of Milan, Italy) Simona Ferrante (Politecnico di Milano, Italy)
The probabilistic reasoning in "real-world" context: some reflections about the judgement in medical problem solving
Mirian Agus and Paul Kenneth Hitchcott (University of Cagliari, Italy) Maribel Peró-Cebollero (University of Barcelona, Spain) Joan Guàrdia-Olmos (University of Barcelona, Spain) Maria Pietronilla Penna (University of Cagliari, Italy)

14:45 – 16:25 SS6.1: Special Session: Novel Techniques in Medical Ultrasound (I) Room: Aula Multimediale
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Dynamic velocity vector and relative pressure estimation in the left ventricle with dynamic contrast-enhanced ultrasound of low frame rates
Probe Production for Characterizing Acoustic Field Effects Depending On the Geometry of Piezoelectric Transducers
Design of Medical Ultrasound Probe: Measurement System for the Characterization of Reverberations
A Comparative Study on the Influence of Phantoms and Test objects on Quality Control Measurements in B-mode ultrasound systems: preliminary results

14:45 – 16:25 T6.3: Measurements in medical imaging (III) Room: Aula 1
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Accurate Technique for Measuring Electrical Permittivity of Biological Tissues at Low Frequencies and Sensitivity Analysis
Quantitative Analysis of Videofluoroscopic Swallowing Study for the Assessment of Laryngeal Elevation
Feasibility of Infrared Thermography Use for Neuromusculoskeletal Rehabilitation
Context-Awareness in Non-Contact, Multi-Modality, Bed-Based Monitoring of Vital Signs

16:45 – 18:25 T12: Miscellaneous Measuremenmt and Applications Room: Sala del Chiostro
Digital Sampling Technique in the Calibration of Medical Testing Equipment with Arbitrary Waveforms781 Steven Yang (Standards and Calibration Laboratory, Hong Kong) Brenda Lam (Standards and Calibration Laboratory, Hong Kong) Chris Ng (Standards and Calibration Laboratory, Hong Kong)
A Sensor Network for Particulate Distribution Estimation
Measuring Older Driver Behaviours with Prior and Post Exposure to Collision Locations
Driving Destination Measures in Older Adult Drivers with Differing Health Statuses
Direct Modulation of High-Frequency Neural Oscillations in the Auditory Cortex Through Electrical Microstimulation Generated by PVDF Sensors

16:45 – 18:25 SS7.2: Special Session: Tools for objectification and measurement in psychiatry, psychology and clinical neuroscience (II) Room: Saletta del Chiostro
The influence of resilience factors in the treatment of substances addiction A Multylayer Perceptron Predictive Model
Natale Salvatore Bonfiglio (University of Pavia, Italy) Roberta Renati (University of Pavia, Italy) Eliano Pessa (University of Pavia, Italy) Maria Pietronilla Penna (University of Cagliari, Italy)
Italian students and the Grit-S: A self-report questionnaire for measuring perseverance and passion for long-term goals
Comparing different methods of measurement in psychiatry and clinical psychology. The diagnostic power of the new neurophysiology techniques
Diagnostic uncertainty in Alzheimer's disease. A bio-metrology perspective addressed to microRNA-based biomarkers
Patterns of physical activity in individuals withParkinson's disease Micaela Porta (University of Cagliari, Italy) Federica Corona (University of Cagliari, Italy) Giuseppina Pilloni (University of Cagliari, Italy) Carlo Casula (Brotzu General Hospital Cagliari, Italy) Roberta Pili (University of Cagliari, Italy) Mauro Murgia (University of Cagliari, Italy) Maria Pietronilla Penna (University of Cagliari, Italy) Massimiliano Pau (University of Cagliari, Italy)

16:45 – 18:25 SS6.2: Special Session: Novel Techniques in Medical Ultrasound (II) Room: Aula Multimediale
A Mathematical Model for Reverberations in Biomedical Ultrasound Transducers: a case study
Measurement of Left Ventricular Parameters using Ultrasound Transducer - a preliminary study
Evaluation of Local Pulse Wave Velocity using an Image Free Ultrasound Technique
Numerical Analysis of Ultrasound Tomography and Frequency Optimization in Human Abdomen Model
Investigation of Different TMMs in High Intensity Focused Ultrasound Applications Baki Karaböce (National Metrology Institute, Turkey) Emel Çetin (National Metrology Institute, Turkey) Hüseyin Okan Durmuş (National Metrology Institute, Turkey) Mithat Özdingiş (National Metrology Institute, Turkey) Hazal Ozturk (Kocaeli University, Turkey) Kutluhan Mahmat (Kocaeli University, Turkey) Mehmet Ali Guler (Marmara University & Tubitak UME, Turkey)

16:45 – 18:25 T6.4: Measurements in medical imaging (IV) Room: Aula 1
Improvement on Conductivity Image Reconstruction in Magnetic Induction Tomography
Infrared Passive Thermography to Identify and Assess Inflammatory Diseases Rosario Morello (University of Reggio Calabria, Italy) Claudio De Capua (University of Reggio Calabria, Italy) Fabio Leccese ("Roma Tre" University, Italy) Aime' Lay-Ekuakille (University of Salento, Italy)
Effect Size Comparison for Gaussian and Rician Modelling within fMRI Data
Extracting Features from Optical Coherence Tomography for Measuring Optical Nerve Thickness
Radiation Dose Assessement On Dual and 16 slices MDCT Using Monte Carlo Simulation

9:00 – 10:40 T11.3: Wearable physiology and activity monitor (III) Room: Sala del Chiostro
Contactless Measurement of Heart Rate for Exergames Applications
Digital Screen Detection Using a Head-mounted Color Light Sensor Tommaso Martire (San Raffaele Hospital, Italy); Payam Nazemzadeh (IRCCS Ospedale San Raffaele, Italy) Alessia Cristiano (IRCCS Ospedale San Raffaele, Italy) Alberto Sanna (IRCCS Ospedale San Raffaele, Italy) Diana Trojaniello (IRCCS Ospedale San Raffaele, Italy)
Human skin as data transmission medium for improved privacy and usability in wearable electronics90° Juris Ormanis (Institute of Electronics and Computer Science, Latvia) Krisjanis Nesenbergs (Institute of Electronics and Computer Science, Latvia)
Can MIMUs positioned on the ankles provide a reliable detection and characterization of U-turns in gait?
Improvement of Signal Quality During Recovery of Compressively Sensed ECG Signals

9:00 – 10:40 T4.1: E-health technologies and remote monitoring for disability and aging (I) Room: Saletta del Chiostro
A Technological Solution for Supporting Fall Prevention Exercises at the Physiotherapy Clinic
Health@Home: pilot cases and preliminary results. Integrated residential sensor network to promote the active aging of real users. Sara Casaccia (Università Politecnica delle Marche, Italy) Filippo Pietroni (Università Politecnica delle Marche, Italy) Lorenzo Scalise (Università Politecnica delle Marche, Italy) Gian Marco Revel (Università Politecnica delle Marche, Italy) Andrea Monteriù (Università Politecnica delle Marche, Italy) Mariorosario Prist (Università Politecnica delle Marche, Italy) Emanuele Frontoni (Università Politecnica delle Marche, Italy) Sauro Longhi (Università Politecnica delle Marche, Italy)
Video-Based Analysis of Heart Rate Applied to Falls
Assessing the Risk of Fall in Older People through Turning Test
A radar system for indoor human localization and breath monitoring

9:00 – 10:40 SS5.1: Special Session: Motion capture measurement systems for medical applications (I) Room: Aula Multimediale
Smart textile based on FBG sensors for breath-by-breath respiratory monitoring: tests on women
Measurement system based on RGB camera signal for contactless breathing pattern and respiratory rate monitoring
Carlo Massaroni (Università Campus Bio-Medico di Roma, Italy) Emiliano Schena (Università Campus Bio-Medico di Roma, Italy) Mario Merone (Università Campus Bio-Medico di Roma, Italy) Fabrizio Taffoni (Università Campus Bio-Medico di Roma, Italy) Sergio Silvestri (Università Campus Bio-Medico di Roma, Italy)
Wavelet-based detection of gait events from inertial sensors: analysis of sensitivity to scale choice
Evaluation of an integrated sensory glove at decreasing joint flexion degree
Comparison of Different Motion Capture Setups for Gait Analysis

9:00 – 10:40 T2.4: Biosignal processing for diagnostics in medicine (IV) Room: Aula 1
A novel analytical approach to assess dyskinesia in patients with Parkinson disease
Implementation of ECoG Signal Energy, Entropy and Fractal Dimension for Spike Detection
Hybrid Sensor Based E-Nose For Lung Cancer Diagnosis
A Novel Measurement System to Estimate the Trans-Pulmonary Pressure Exploiting the Central Venous Pressure and ECG Signals 991 Tommaso Addabbo (University of Siena, Italy) Ada Fort (University of Siena, Italy) Riccardo Moretti (University of Siena, Italy) Marco Mugnaini (University of Siena, Italy) Valerio Vignoli (University of Siena, Italy) Maurizio Gennaro Cataldo (University of Siena, Italy) Gabriele Cevenini (University of Siena, Italy) Federico Franchi (University of Siena, Italy)
Assessment of cardio-respiratory rates by non-invasive measurement methods in hospitalized preterm baby997 Paolo Marchionni (Università Politecnica delle Marche, Italy) Luca Antognoli (Università Politecnica delle Marche, Italy); Stefano Nobile (Azienda Ospedaliero-Universitaria Ospedali Riuniti, Italy) Virgilio Carnielli (Università Politecnica delle Marche, Italy) Lorenzo Scalise (Università Politecnica delle Marche, Italy)

11:10 – 12:50 T11.4: Wearable physiology and activity monitor (IV) Room: Sala del Chiostro
Measurement of Elderly Daily Physical Activity by Unobtrusive Instrumented Shoes
Wearable heart rate monitoring as stress response indicator in children with neurodevelopmental disorder1007 Erika Pittella (University of Rome, La Sapienza, Italy) Emanuele Piuzzi (University of Rome, La Sapienza, Italy) Emanuele Rizzuto (University of Rome, La Sapienza, Italy) Zaccaria Del Prete (University of Rome, La Sapienza, Italy) Francesca Fioriello (University of Rome, La Sapienza, Italy) Andrea Maugeri (University of Rome, La Sapienza, Italy) Carla Sogos (University of Rome, La Sapienza, Italy)
ABBI-K: a novel tool for evaluating spatial and motor abilities in visually impaired children
Measurement of the force exchanged by orthodontic masks and patients Marco Tarabini (Politecnico di Milano, Italy) Pietro Marzaroli (Politecnico di Milano, Italy) Delphine Chadefaux (Politecnico di Milano, Italy) Diego Scaccabarozzi (Politecnico di Milano, Italy) Marco Migliorati (Migliorati Ortodonzia, Italy)
Smart-Wearables and Heart-Rate Assessment Accuracy André F Manso (Instituto Superior Tecnico Universidade de Lisboa, Portugal) Ana Fred (Instituto Superior Tecnico Universidade de Lisboa, Portugal) Rui C. Neves (CAST - Cons. e Apl. em Sistemas e Tecnologias, Portugal) Rui C. Ferreira (Hospital Santa Marta - CHLC, Portugal)

11:10 – 12:50 T4.2: E-health technologies and remote monitoring for disability and aging (II) Room: Saletta del Chiostro
Mining Audiograms to Improve the Interpretability of Automated Audiometry Measurements
An ISpace-based Dietary Advisor Balazs Tusor (Óbuda University & Integrated Intelligent Systems Japanese-Hungarian Laboratory, Hungary) Annamária R. Várkonyi-Kóczy (Óbuda University, Hungary) József Bukor (J. Selye University, Slovakia)
Measuring age-related differences in kinematic postural strategies under yaw perturbation
Real-Time Pervasive Monitoring System for Ambulatory Patients André F Manso (IST - Instituto Superior Técnico, Universidade de Lisboa, Portugal) Ana Fred (I.S.T Technical U. Lisbon / I.T. Lisbon, Portugal); Rui C. Neves (CAST - Cons. e Apl. em Sistemas e Tecnologias, Lda., Portugal) Rui C. Ferreira (Hospital Santa Marta - CHLC, Portugal)

11:10 – 12:50 SS5.2: Special Session: Motion capture measurement systems for medical applications (II) Room: Aula Multimediale	
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11:10 – 12:50 T10: Robotics for rehabilitation Room: Aula 1
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A Robust Interface for Head Motion based Control of a Robot Arm using MARG and Visual Sensors
Submovement changes in goal-directed and non-goal-directed ankle movements using pediAnklebot
Does Reinforcement Learning Outperform PID in the Control of FES Induced Elbow Flex-Extension?
Object Recognition Through Manipulation Using Tactile Enabled Prosthetic Fingers and Feedback Glove - Experimental Study

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