

Sunday, 11.4.2010

17:00-20:00 Registration & Icebreaker

at the entrance hall of the Fritz-Reuter-Saal, Hegelplatz 2, 10117 Berlin-Mitte

Monday, 12.4.2010

09:00 Opening

09:30 Session 1 - Neuro-cardiovascular coupling - Chairs: G. Baselli, T. Penzel

G. Baselli, F. Aletti, V. Pace, E. Molteni, S. Cerutti, D. Contini, R. Re, A. Torricelli, L. Spinelli, R. Cubeddu - Cardiovascular Oscillations: Signal in Skin Flow; Noise in Functional Transcranial NIRS 12

A. M. Bianchi, E. Molteni, D. Contini, R. Re, M. Caffini, A. Torricelli, L. Spinelli, R. Cubeddu, S. Cerutti - A NIRS time-resolved study of the correlations between cardiac autonomic oscillations and cerebral hemodynamics 13

C. Heinze, U. Trutschel, M. Golz, D. Edwards, H. Schein, J. Haueisen - Fatigue Estimation Using Heart Rate Measures 14

M. Glos, W. Klaus, C. Schöbel, I. Fietze, G. Baumann, T. Penzel - Relationship between EEG arousals and autonomic arousals during sleep 15

A. Baharav, G. Dorfman Furman - Sleepiness on task can be detected using heart rate fluctuations 16

T. Bassani, V. Magagnin, S. Guzzetti, G. Citerio, A. Porta - Granger causality in cardiovascular variability series during deep anaesthesia 17

11:00 Coffee break

11:30 Session 2 - Tests, Stimulations, Interactions - Chairs: R. Bauernschmitt, A. Aubert

C. Cammarota, M. Curione - Trend and variability of the heart beat RR intervals during the exercise stress test 18

B. Retzlaff, N. Wessel, N. Bauernschmitt, H. Malberg, A. Gapelyuk, M. Riedl, R. Lange, R. Bauernschmitt - Preserved cardiovascular regulation in patients undergoing transcatheter valve procedures 19

S. Vandeput, K. Jansen, L. Lagae, A. E. Aubert, S. van Huffel - Nonlinear cardiovascular oscillations in children with refractory epilepsy before and after the vagus nerve stimulation 20

M. Riedl, A. Suhrbier, H. Stepan, J. Kurths, N. Wessel - Short-term couplings of the cardiovascular system in pregnant women suffering from pre-eclampsia 21

L. Faes, G. Nollo, A. Porta - Detection of Causality in Short Term Cardiovascular Interactions: a Method Based on Non-Uniform Embedding and Conditional Entropy 22

C. Gallet, B. Chapuis, C. Barrès, C. Julien - Time frequency analysis of the baroreflex control of renal sympathetic nerve activity in the conscious rat 23

Monday, 12.4.2010

13:00 Lunch

14:00 Plenary C. Grebogi -Are the fractal skeletons the explanation for the narrowing of arteries due to cell trapping in a disturbed blood flow? 24

14:30 Session 3 - Heart rate asymmetry - Chairs: P. Guzik, A. Porta

A. Porta, E. Tobaldini, T. Gneccchi-Ruscione, D. Cysarz, P. Van Leeuwen, N. Montano - Testing time irreversibility through local non linear prediction: application to short-term heart period variability during graded head-up tilt 25

J. Piskorski, P. Guzik - How heart rate asymmetry arises from the analysis of time irreversibility of the RR time series 26

P. Guzik, J. Piskorski - Clinical value of heart rate asymmetry 27
Discussion

15:30 Coffee break

16:00 Session 4 - Theory 1 - Chairs: U. Parlitz, J. J. Zebrowski

I. Blekhnman - Non-linear oscillatory phenomena at functioning of cardiovascular system 28

E. Surovyatkina - Nonlinear origin of sudden change of heart rhythm 29

S. Fruhner, H. Engel, M. Bär - Electrical excitation of the human heart and the effect of contraction 30

D. Kupitz, M. J. B. Hauser - Interaction of a pair scroll waves 31

N. F. Rulkov - A Map-based model of the cardiac action potential 32

T. Buchner, J. Pietkun, P. Kuklik - Complex activity patterns in arterial wall. Results from a model of calcium dynamics. 33

17:30 Poster session

18:30 ESGCO Steering Committee internal meeting

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09:30 Session 5 - Applications 1 - Chairs: M. Di Rienzo, D. Hoyer

J. Christoph, G. Luther, E. Bodenschatz, S. Luther - Imaging the beating heart: Motion artifact removal from optical mapping data 35

L. Burattini, S. Bini, R. Burattini - T-wave alternans in healthy subjects: physiological oscillation or noise? 36

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A. Schlemmer, U. Parlitz, S. Lehnart, N. Wessel, S. Luther - A Versatile Scientific Programming Environment for Cardiovascular Data Analysis 40

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11:30 Session 6 - Theory 2 - Chairs: C. Grebogi, J. Kurths

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13:00 Lunch

14:00 Plenary J. R. Moorman - Cardiovascular oscillations at the bedside: Early diagnosis of neonatal sepsis using heart rate characteristics monitoring 47

14:45 Session 7 - QT Analyses - Chairs: M. Baumert, R. Fischer

M. Baumert, A. Seeck, E. Nalivaiko, R. Faber, P. Sanders, A. Voss - QT interval and rate adaptation during pregnancy 48

J. Halánek, P. Jurák, P. Leinveber, V. Vondra, J. Lipoldová - Gender dependency of QT parameters 49

R. Fischer, V. von Tscherner, A. Gapelyuk, U. Zacharzowsky, H. Schuett, N. Wessel, A. Schirdewan - Automated determination of spatial QT interval distribution in Cardiac Magnetic Field Mapping reveals repolarisation inhomogeneities in high-risk patients 50

15:30 Coffee break & Social Event

09:00 Plenary J. Kurths - Complex Synchronization and Recurrence Analyses - Are such Nonlinear Techniques Useful for Multivariate Biosignal Studies? 51

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