

## List of main Scientific Publications – Luca Faes

(last updated: May 2, 2015)

### A. Book Chapters

1. F Ravelli, **L Faes**, V Corino, L Mainardi: 'Organization measures of atrial activity during fibrillation', in *Understanding Atrial Fibrillation. The Signal Processing Contribution*; L Mainardi, L Sornmo, S Cerutti (eds); Morgan & Claypool, 2008; pp. 127-150.
2. **L Faes**, G Nollo, 'Multivariate frequency domain analysis of causal interactions in physiological time series', in *Biomedical Engineering, Trends in Electronics, Communications and Software*; AN Laskovski (ed); INTECH, 2011; pp. 403-428. ISBN: 978-953-307-475-7.
3. **L Faes**, 'Assessing connectivity in the presence of instantaneous causality', in *Methods in Brain Connectivity Inference through Multivariate Time Series Analysis*; L Baccalà, K Sameshima (eds); CRC press, Taylor and Francis; 2014, pp. 87-112. ISBN: 9781439845721.
4. **L Faes**, A Porta, 'Conditional entropy-based evaluation of information dynamics in physiological systems', in *Directed Information Measures in Neuroscience*, R Vicente, M Wibral, J Lizier (eds), Springer-Verlag; 2014, pp. 61-86; ISBN: 978-3-642-54473-6; DOI: 10.1007/978-3-642-54474-3.
5. A Porta, **L Faes**, G Nollo, ACM Takahashi, AM Catai: 'Influences of aging on cardiovascular control evaluated through a model-free approach to the assessment of complexity and causality', in *Interpretation of ECG time series using inter-beat variability analysis: From engineering to medicine*; H Jelinek, A Khandoker, D Conforth (eds.), CRC Press; 2015, in press.

### B. Articles in Peer-reviewed indexed journals

1. G Nollo, A Porta, **L Faes**, M Del Greco, M Disertori, F Ravelli: 'Causal linear parametric model for baroreflex gain assessment in patients with recent myocardial infarction', *Am J Physiol Heart Circ Physiol* 2001;280:H1830-H1839.
2. **L Faes**, G Nollo, M Kirchner, E Olivetti, F Gaita, R Riccardi, R Antolini: 'Principal component analysis and cluster analysis for measuring the local organisation of human atrial fibrillation', *Med Biol Eng Comput* 2001;39:656-663.
3. G Nollo, **L Faes**, A Porta, B Pellegrini, F Ravelli, M Del Greco, M Disertori, R Antolini: 'Evidence of unbalanced regulatory mechanism of heart rate and systolic pressure after acute myocardial infarction', *Am J Physiol Heart Circ Physiol* 2002;83:H1200-H1207.
4. **L Faes**, G Nollo, R Antolini, F Gaita, F Ravelli: 'A method for quantifying atrial fibrillation organization based on wave morphology similarity', *IEEE Trans Biomed Eng* 2002;49:1504-1513.
5. **L Faes**, G Nollo, R Antolini: 'Experimental approach for testing the uncoupling between cardiovascular variability series', *Med Biol Eng Comput* 2002;40:565-570.
6. **L Faes**, GD Pinna, A Porta, R Maestri, G Nollo: 'Surrogate data analysis for assessing the significance of the coherence function', *IEEE Trans Biomed Eng* 2004;51(7):1156-1166.
7. **L Faes**, A Porta, R Cucino, S Cerutti, R Antolini, G Nollo: 'Causal transfer function analysis to describe the closed loop interactions between cardiovascular and cardiorespiratory variability signals', *Biol Cybern* 2004;90(6):390-399.
8. B Pellegrini, **L Faes**, G Nollo, F Schena: 'Quantifying the contribution of arm postural tremor to the outcome of goal-directed pointing task by displacement measures', *J Neurosci Methods* 2004;139:185-193.

9. G Nollo, **L Faes**, A Porta, R Antolini, F Ravelli: 'Exploring directionality in spontaneous heart period and systolic pressure variability interactions in humans. Implications in the evaluation of the baroreflex gain', *Am J Physiol Heart Circ Physiol* 2005;288(4):H1777-H1785.
10. F Ravelli, **L Faes**, L Sandrini, F Gaita, R Antolini, M Scaglione, G Nollo 'wave similarity mapping shows the spatiotemporal distribution of fibrillatory wave complexity in the human right atrium during paroxysmal and chronic atrial fibrillation', *J Cardiovasc Electrophysiol* 2005;16:1071-1076.
11. M Masè, **L Faes**, R Antolini, M Scaglione, F Ravelli 'Quantification of synchronization during atrial fibrillation by Shannon entropy: validation in patients and computer model of atrial arrhythmias', *Physiol Meas* 2005;26:911-923.
12. **L Faes**, L Widesott, M Del Greco, R Antolini, G Nollo: 'Causal cross-spectral analysis of heart rate and blood pressure variability for describing the impairment of the cardiovascular control in neurally mediated syncope', *IEEE Trans Biomed Eng* 2006;53:65-73.
13. **L Faes**, G Nollo: 'Bivariate nonlinear prediction to quantify the strength of complex dynamical interactions in short-term cardiovascular variability', *Med Biol Eng Comput* 2006;44(5):383-392.
14. **L Faes**, R Cucino, G Nollo: 'Mixed predictability and cross-validation to assess nonlinear Granger causality in short cardiovascular variability series', *Biomedizinische Technik (Biomedical Engineering)* 2006;51(4):255-259.
15. F Ravelli, M Mase, M Del Greco, **L Faes**, M Disertori: 'Deterioration of organization in the first minutes of atrial fibrillation: a beat-to-beat analysis of cycle length and wave similarity', *J Cardiovasc Electrophysiol* 2007;18(1):60-65.
16. **L Faes**, G Nollo, F Ravelli, L Ricci, M Vescovi, M Turatto, F Pavani, R Antolini: 'Small-sample characterization of stochastic approximation staircases in forced-choice adaptive threshold estimation', *Perception & Psychophysics* 2007;69(2):254-262.
17. A Porta, **L Faes**, M Masè, G D'Addio, GD Pinna, R Maestri, N Montano, R Furlan, S Guzzetti, G Nollo, A Malliani: 'An integrated approach based on uniform quantization for the evaluation of complexity of short-term heart period variability: application to 24h Holter recordings', *Chaos* 2007;17(1):015117.
18. **L Faes**, F Ravelli: 'A morphology-based approach to the evaluation of atrial fibrillation organization', *IEEE Eng Med Biol Mag* 2007;26(4):59-67.
19. A Cristoforetti, M Masè, **L Faes**, M Centonze, M Del Greco, R Antolini, G Nollo, F Ravelli: 'A stochastic approach for automatic registration and fusion of left atrial electroanatomic maps with 3D CT anatomical images', *Phys Med Biol* 2007;52(20):6323-6337.
20. A Cristoforetti, **L Faes**, F Ravelli, M Centonze, M Del Greco, R Antolini, G Nollo: 'Isolation of the left atrial surface from cardiac multi-detector CT images based on marker controlled watershed segmentation', *Med Eng Phys* 2008;30(1):48-58.
21. **L Faes**, G Nollo, K H Chon: 'Assessment of Granger causality by nonlinear model identification: application to short-term cardiovascular variability', *Ann Biomed Eng* 2008;36(3):381-395.
22. G Nollo, M Marconcini, **L Faes**, F Bovolo, F Ravelli, L Bruzzone: 'An Automatic system for the analysis and the classification of human atrial fibrillation patterns from intracardiac electrograms', *IEEE Trans Biomed Eng* 2008;55(9):2275-2285.
23. Y Bai, KL Siu, S Ashraf, **L Faes**, G Nollo, KH Chon: 'Nonlinear coupling is absent in acute myocardial patients but not healthy subjects', *Am J Physiol Heart Circ Physiol* 2008;295(2):H578-586.
24. **L Faes**, A Porta, G Nollo: 'Mutual nonlinear prediction as a tool to evaluate coupling strength and directionality in bivariate time series: Comparison among different strategies based on  $k$  nearest neighbors', *Phys Rev E* 2008;78:026201.

25. G Nollo, **L Faes**, R Antolini, A Porta: 'Assessing causality in normal and impaired short-term cardiovascular regulation via nonlinear prediction methods', *Phil Trans R Soc A* 2009;367:1423-40.
26. **L Faes**, Ki H Chon, G Nollo: 'A method for the time-varying nonlinear prediction of complex nonstationary biomedical signals', *IEEE Trans Biomed Eng* 2009;56(2):205-209.
27. **L Faes**, H Zhao, Ki H Chon, G Nollo: 'Time-varying surrogate data to assess nonlinearity in nonstationary time series: application to heart rate variability', *IEEE Trans Biomed Eng* 2009;56(3):685-695.
28. S Erla, **L Faes**, E Tranquillini, D Orrico, G Nollo: 'Multivariate autoregressive model with instantaneous effects to improve brain connectivity estimation', *Int J Bioelectromag* 2009; 11(2):74-79.
29. **L Faes**, A Porta, G Nollo: 'Testing frequency domain causality in multivariate time series', *IEEE Trans Biomed Eng* 2010; 57(8):1897-1906.
30. **L Faes**, G Nollo: 'Assessing frequency domain causality in cardiovascular time series with instantaneous interactions', *Meth Inf Med* 2010; 49(5):453-457.
31. S Erla, **L Faes**, G Nollo: 'Quantifying changes in EEG complexity induced by photic stimulation', *Meth Inf Med* 2010; 49(4); 496-500.
32. **L Faes**, G Nollo: 'Extended causal modeling to assess Partial Directed Coherence in multiple time series with significant instantaneous interactions', *Biol Cyb* 2010; 103:387-400.
33. U Richter, **L Faes**, A Cristoforetti, M Masè, F Ravelli, M Stridh, L Sörnmo: 'A novel approach to propagation patterns analysis in intracardiac atrial fibrillation signals', *Ann Biomed Eng* 2011; 39(1):310-323.
34. S Erla, **L Faes**, E Tranquillini, D Orrico, G Nollo: 'k-nearest neighbour local linear prediction for quantifying EEG complexity during intermittent photic stimulation', *Med Eng Phys* 2011; 33(4):504-512.
35. M Masè, W Mattei, R Cucino, **L Faes**, G Nollo: 'Feasibility of cuff-less measurement of systolic and diastolic arterial blood pressure', *J Electrocardiol* 2011; 44:201-207.
36. **L Faes**, G Nollo, A Porta: 'Information-based detection of nonlinear Granger causality in multivariate processes via a nonuniform embedding technique', *Phys Rev E*; 2011; 83(5 Pt 1):051112.
37. **L Faes**, G Nollo, A Porta: 'Information domain approach to the investigation of cardio-vascular, cardio-pulmonary and vasculo-pulmonary causal couplings', *Front Physiol*, Special Issue "Engineering Approaches to Study Cardiovascular Physiology: Modeling, Estimation, and Signal Processing", 2011; 2:80.
38. **L Faes**, G Nollo, A Porta: 'Non-uniform multivariate embedding to assess the information transfer in cardiovascular and cardiorespiratory variability series', *Comput Biol Med* 2012; 42:290-297.
39. S Erla, **L Faes**, G Nollo, C Braun, C Papadelis: 'Multivariate EEG Spectral Analysis elicits the functional link between motor and visual cortex during integrative sensorimotor tasks', *Biomed Signal Process Control* 2012; 7:221-227.
40. U Richter, **L Faes**, F Ravelli, L Sörnmo, 'Propagation pattern analysis during atrial fibrillation based on sparse modeling', *IEEE Trans Biomed Eng* 2012; 59(5):1319-1328.
41. **L Faes**, S Erla, G Nollo: 'Measuring connectivity in linear multivariate processes: definitions, interpretation and practical analysis', *Comp Math Methods Med*, special issue on "Methodological Advances in Brain Connectivity", 2012; 140513:18 pages.
42. **L Faes**, S Erla, G Nollo: 'Block partial directed coherence: a new tool for the structural analysis of brain Networks', *Int J Bioelectromag* 2012;14(4):162-166.

43. **L Faes**, RG Andrzejak, M Ding, D Kugiumtzis: 'Methodological Advances in Brain Connectivity', *Comp Math Methods Med*, editorial of the special issue on “Methodological Advances in Brain Connectivity”, 2012; 492902:2 pages.
44. A Porta, **L Faes**: 'Assessing causality in brain dynamics and cardiovascular control', *Philosophical Transactions A*, editorial of the special issue on “Causality in Brain Dynamics and Cardiovascular Control”, 2013;371:20120517 (5 pages).
45. **L Faes**, G Nollo, A Porta: 'Compensated transfer entropy as a tool for reliably estimating information transfer in physiological time series', *Entropy*; special issue on “Transfer Entropy”, 2013; 15(1):198-219.
46. **L Faes**, G Nollo: 'Measuring frequency domain Granger causality for multiple blocks of interacting time series', *Biol Cybern* 2013; 107:217-232 (DOI 10.1007/s00422-013-0547-5).
47. **L Faes**, S Erla, A Porta, G Nollo: 'A framework for assessing frequency domain causality in physiological time series with instantaneous effects', *Philosophical Transactions A*, special issue on “Causality in Brain Dynamics and Cardiovascular Control”; 2013;371:20110618 (21 pages).
48. A Porta, P Castiglioni, M Di Rienzo, T Bassani, V Bari, M Zanirato, **L Faes**, G Nollo, A Cividjan, L Quintin: 'Cardiovascular control and time domain Granger causality: insight from selective autonomic blockade', *Philosophical Transactions A*, special issue on “Causality in Brain Dynamics and Cardiovascular Control”; 2013;371:20120161 (16 pages).
49. **L Faes**, A Porta, G Rossato, A Adami, D Tonon, A Corica, G Nollo: 'Investigating the mechanisms of cardiovascular and cerebrovascular regulation in orthostatic syncope through an information decomposition strategy', *Autonomic Neurosci* 2013; 178:76-82.
50. **L Faes**, M Masè, G Nollo, KH Chon, JP Florian: 'Measuring postural-related changes of spontaneous baroreflex sensitivity after repeated long-duration diving: frequency domain approaches', *Autonomic Neurosci* 2013; 178:96-102.
51. **L Faes**, G Nollo, A Porta: 'Mechanisms of causal interaction between short-term heart period and arterial pressure oscillations during orthostatic challenge', *J Appl Physiol* 2013;114:1657-1667.
52. JP Florian, EE Simmons, KH Chon, **L Faes**, B Shykoff: 'Cardiovascular and autonomic responses to physiological stressors before and after six hours of water immersion', *J Appl Physiol* 2013; 115:1275-1289.
53. A Porta, **L Faes**, V Bari, A Marchi, T Bassani, G Nollo, ACM Takahashi, AM Catai, 'Effect of age on complexity and causality of the cardiovascular control: comparison between model-based and model-free approaches', *PLOS One* 2014; 9(2):e89463 (14 pages).
54. **L Faes**, D Marinazzo, A Montalto, G Nollo, 'Lag-specific transfer entropy as a tool to assess cardiovascular and cardiorespiratory information transfer', *IEEE Trans Biomed Eng* 2014; 61(10):2556-2568.
55. **L Faes**, G Nollo, F Jurysta, D Marinazzo, 'Information dynamics of brain-heart physiological networks during sleep', *New J Phys* 2014; 16:105005 (20 pages).
56. A Montalto, **L Faes**, D. Marinazzo, 'MuTE: a MATLAB toolbox to compare established and novel estimators of the multivariate transfer entropy', *PLOS ONE* 2014; 9(10):e109462 (13 pages).
57. **L Faes**, A Porta, G Nollo, 'Information decomposition in bivariate systems: theory and application to cardiorespiratory dynamics', *Entropy*, special issue on “Entropy and Cardiac Physics”, 2015, 17:277-303.
58. **L Faes**, D Kugiumtzis, A Montalto, G Nollo, D Marinazzo, 'Estimating the decomposition of predictive information in multivariate systems', *Phys. Rev. E* 2015; 91:032904.

59. L Schiatti, G Nollo, G Rossato, **L Faes**, 'Extended Granger causality: a new tool to identify the structure of physiological networks', *Phys. Meas.* 2015; 36:827-843.
60. **L Faes**, D Marinazzo, F Jurysta, G Nollo, 'Linear and nonlinear analysis of brain-heart and brain-brain interactions during sleep', *Phys. Meas.* 2015; 36: 683-698.
61. A Porta, G Nollo, **L Faes**, 'Editorial: Bridging the gap between the development of advanced biomedical signal processing tools and clinical practice', *Phys. Meas.* 2015; 36:627-631.
62. C Varon, A Montalto, K Jansen, L Lagae, D Marinazzo, **L Faes**, S Van Huffel, 'Interictal cardiorespiratory variability in temporal lobe and absence epilepsy in childhood', *Phys. Meas.* 2015; 36:845-856.

### C. Articles in peer-reviewed indexed Conference Proceedings

1. **L Faes**, G Nollo, A Porta, F Ravelli: 'Noninvasive assessment of baroreflex sensitivity in post-MI patients by an open loop parametric model of RR-systolic pressure interactions', *Comp in Cardiol* 1999;26:217-220.
2. M Kirchner, **L Faes**, E Olivetti, R Riccardi, M Scaglione, F Gaita, R Antolini: 'Local electrical characterisation of human atrial fibrillation', *Comp in Cardiol* 2000;27:499-502.
3. G Nollo, **L Faes**, A Porta, B Pellegrini, R Antolini: 'Synchronization index for quantifying nonlinear causal coupling between RR interval and systolic arterial pressure after myocardial infarction', *Comp in Cardiol* 2000;27:143-146.
4. **L Faes**, G Nollo, R Antolini: 'Investigating the level of significance of the coherence function in cardiovascular variability analysis', *Comp in Cardiol* 2001;28:481-484.
5. L Widesott, G Nollo, **L Faes**, A Porta, M Del Greco, R Antolini: 'Spectral decomposition of RR-variability obtained by an open loop parametric model for the diagnosis of neuromediate syncope', *Comp in Cardiol* 2001;28:477-480.
6. **L Faes**, L Sandrini, F Ravelli, R Antolini, G Nollo: 'Quantitative assessment of regularity and synchronization of intracardiac recordings during human atrial fibrillation', *Comp in Cardiol* 2002;29:597-600.
7. L Sandrini, **L Faes**, F Ravelli, R Antolini, G Nollo: 'Morphology-based measurement of activation time in human atrial fibrillation', *Comp in Cardiol* 2002;29:593-596.
8. G Nollo, L Widesott, **L Faes**, A Porta, R Antolini: 'Need of causal analysis for assessing phase relationships in closed loop interacting cardiovascular variability series', *Comp in Cardiol* 2002;29:61-64.
9. **L Faes**, A Porta, R Antolini, G Nollo: 'Role of causality in the evaluation of coherence and transfer function between heart period and systolic pressure in humans', *Comp in Cardiol* 2004;31:277-280.
10. M Masè, F Ravelli, **L Faes**, R Antolini, G Nollo: 'Quantitative assessment of synchronization during atrial fibrillation by Shannon Entropy characterization of propagation delays', *Comp in Cardiol* 2004;31:257-260.
11. G Nollo, A Cristoforetti, **L Faes**, M Centonze, M Del Greco, R Antolini, F Ravelli: 'Registration and fusion of segmented left atrium CT images with CARTO electrical maps for the ablative treatment of atrial fibrillation', *Comp in Cardiol* 2004;31:345-348.
12. **L Faes**, R Cucino, G Nollo: 'Evaluation of a nonlinear prediction algorithm quantifying regularity, synchronization and directionality in short cardiovascular variability series', *Comp in Cardiol* 2006;33:177-180.
13. R Cucino, **L Faes**, G Nollo: 'Exploring Causal Interactions between Blood Pressure and RR Interval at the respiratory frequency', *Comp in Cardiol* 2006;33:649-652.

14. **L Faes**, A Porta, G Nollo: 'Mutual nonlinear prediction of cardiovascular variability series: comparison between exogenous and autoregressive exogenous models', *Proc of the 29th Annual Int Conf IEEE EMBS*, 2007; 5954-5957.
15. H Zhao, **L Faes**, G Nollo, KH Chon: 'Parametric and nonparametric methods to generate time-varying surrogate data', *Proc of the 30th Annual Int Conf IEEE EMBS*, 2008;3504-3507.
16. **L Faes**, S Erla, G Nollo: 'Quantifying the complexity of short-term heart period variability through K- nearest neighbor local linear prediction', *Comp in Cardiol* 2008;35:549-552.
17. **L Faes**, G Nollo, KH Chon: 'Linear and nonlinear parametric model identification to assess Granger causality in short-term cardiovascular interactions', *Comp in Cardiol* 2008;35:793-796.
18. S Erla, **L Faes**, G Nollo: 'Robust estimation of partial directed coherence by the vector optimal parameter search algorithm', *Proc of the 4<sup>th</sup> IEEE-EMBS Conference on Neural Engineering*, 2009;734-737.
19. **L Faes**, A Porta, G Nollo: 'Surrogate data approaches to assess the significance of directed coherence: application to EEG activity propagation', *Proc of the 31th Annual Int Conf IEEE-EMBS*, 2009; 6280-6283.
20. **L Faes**, S Erla, E Tranquillini, D Orrico, G Nollo, 'An identifiable model to assess frequency-domain Granger causality in the presence of significant instantaneous interactions', *Proc of the 32th Annual Int Conf IEEE-EMBS*, 2010, 102-105.
21. **L Faes**, G Nollo, S Erla, C Papadelis, C Braun, A Porta, 'Detecting nonlinear causal interactions between dynamical systems by non-uniform embedding of multiple time series ', *Proc of the 32th Annual Int Conf IEEE-EMBS*, 2010, 1699-1702.
22. S Erla, C Papadelis, **L Faes**, C Braun, G Nollo, 'Studying Brain Visuo-Tactile Integration through Cross-Spectral Analysis of Human MEG Recordings', *Medicon 2010, IFMBE Proceedings* 2010;29:73-76.
23. **L Faes**, G Nollo: 'Assessing directional interactions among multiple physiological time series: the role of instantaneous causality', *Proc of the 33th Annual Int Conf IEEE-EMBS*, 2011, 5919-5922.
24. U Richter, **L Faes**, F Ravelli, L Sornmo: 'Propagation pattern analysis during atrial fibrillation based on the adaptive group LASSO', *Proc of the 33th Annual Int Conf IEEE-EMBS*, 2011, 5535-5538.
25. **L Faes**, S Erla, G Nollo, 'Compensating for instantaneous signal mixing in transfer entropy analysis of neurobiological time series', *Proc of the 34th Annual Int Conf IEEE-EMBS*, 2012, 3672-3675.
26. **L Faes**, G Nollo, 'Decomposing the transfer entropy to quantify lag-specific Granger causality in cardiovascular variability', *Proc of the 35th Annual Int Conf IEEE-EMBS*, 2013, 5049-5052.
27. **L Faes**, A Montalto, G Nollo, D Marinazzo: 'Information decomposition of short-term cardiovascular and cardiorespiratory variability', *Comp Cardiol* 2013; 40:113-116.
28. A Montalto, D Marinazzo, D Kugiumtzis, G Nollo, **L Faes**: 'Comparing model-free and model-based transfer entropy estimators in cardiovascular variability', *Comp Cardiol* 2013; 40:747-750.
29. **L Faes**, D Marinazzo, F Jurysta, G Nollo: 'Granger causality analysis of sleep brain-heart interactions', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 5-6.
30. D Widjaja, A Montalto, E Vlemincx, D Marinazzo, **L Faes**, S Van Huffel: 'Information dynamics in cardiorespiratory time series during mental stress testing', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 23-24.
31. C Varon, A Montalto, K Jansen, L Lagae, D Marinazzo, **L Faes**, S Van Huffel: 'Interictal cardiorespiratory variability in temporal lobe and absence epilepsy in childhood', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 31-32.

32. L Schiatti, G Nollo, G Rossato, **L Faes**: 'Investigating cardiovascular and cerebrovascular variability in postural syncope by means of extended Granger causality', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 43-44.
33. A Montalto, **L Faes**, D Marinazzo: 'MuTE: a new Matlab toolbox for estimating the multivariate transfer entropy in physiological variability series', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 59-60.
34. K Andersson, OB Suhr, **L Faes**, U Wiklund: 'Directed coherence analysis in patients with severe autonomic dysfunction', *8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO 2014)*, ISBN 978-1-4799-3969-5, 2014; pp. 167-168.
35. **L Faes**, D Widjaja, S Van Huffel, G Nollo: 'Investigating cardiac and respiratory determinants of heart rate variability in an information-theoretic framework', *Proc of the 36th Annual Int Conf IEEE-EMBS*, 2014, pp. 6020-6023.
36. D Widjaja, **L Faes**, A Montalto, I Van Dienst, D Marinazzo, S Van Huffel: 'Information dynamics in cardiorespiratory analyses: application to controlled breathing', *Proc of the 36th Annual Int Conf IEEE-EMBS*, 2014, pp. 6353-6356.
37. D Widjaja, C Varon, D Testelmans, B Buyse, **L Faes**, S Van Huffel: 'Separating respiratory influences from the tachogram: methods and their sensitivity to the type of respiratory signal', *Comp. Cardiol.* 2014; 41:609-612.
38. C Varon, K Jansen, L Lagae, **L Faes**, S Van Huffel: 'Transient behavior of cardiorespiratory interactions towards the onset of epileptic seizures', *Comp. Cardiol.* 2014; 41:917-920.

#### **D. Other Articles in Conference Proceedings**

1. **L Faes**, C Gasperi, R Cucino, A Cevese, R Antolini, G Nollo: 'A method for the causal cross-spectral analysis of heart period and arterial pressure interactions', *MEDICON 2004 Conference*, Ischia, Italy. August, 1-5, 2004.
2. M Masè, **L Faes**, G Nollo, R Antolini, F Ravelli: 'Determination of synchronization of electrical activity in the heart by Shannon entropy measure', *First international meeting on applied physics*, Badajoz, Spain. October 13-18, 2003; in: *Recent Advances in Multidisciplinary Applied Physics*, Amsterdam, Elsevier, pp. 235-239, 2005.
3. **L Faes**, R Cucino, G Nollo: 'Mixed predictability and cross-validation to assess nonlinear Granger causality in short cardiovascular variability series', *European Study Group on Cardiovascular Oscillations*, Jena, Germany. May 15-17, 2006.
4. G Nollo, **L Faes**, R Cucino, A Porta: 'Causal coherence analysis to disclose feedback and feedforward cardiovascular regulatory mechanisms in humans', *European Study Group on Cardiovascular Oscillations*, Jena, Germany. May 15-17, 2006.
5. **L Faes**, S Erla, S Greiner, K H Chon, G Nollo: 'Time-varying nonlinear prediction of EEG signals', *Proc. of the Neuromath workshop 2007*; 47-48. Rome, Italy. December 4-5, 2007.
6. S Erla, S Greiner, **L Faes**, D Orrico, E Tranquillini, M Lisanti, G Nollo: 'Predictability maps of the brain electrical activity', *Proc. of the Neuromath workshop 2007*; 45-46. Rome, Italy. December 4-5, 2007.
7. **L Faes**, H Zhao, K H Chon, G Nollo: 'A method to assess nonlinear dynamics in nonstationary time series based on time-varying surrogate data', *5<sup>th</sup> European Study Group on Cardiovascular Oscillations*, Parma, Italy. April 7-9, 2008.

8. G Nollo, **L Faes**, M Masè, C Gasperi, F Ravelli, A Cevese: 'Low frequency cardiovascular oscillations investigated by causal cross-spectral analysis during  $\alpha$ -blockade in healthy humans: results of a case report study', *5<sup>th</sup> European Study Group on Cardiovascular Oscillations*, Parma, Italy. April 7-9, 2008.
9. **L Faes**, G Nollo: 'Frequency domain evaluation of causality by multivariate autoregressive models with instantaneous effects', *6<sup>th</sup> International Workshop on Biosignal Interpretation*, New Haven, CT, USA. June 23-26, 2009;60-63.
10. S Erla, **L Faes**, G Nollo: 'Quantifying changes in EEG complexity induced by photic stimulation', *6<sup>th</sup> International Workshop on Biosignal Interpretation*, New Haven, CT, USA. June 23-26, 2009;212-215.
11. CG Scully, **L Faes**, G Nollo, KH Chon: 'Evaluation of the automatic-selection method for the threshold  $r$  for approximate entropy', *6<sup>th</sup> International Workshop on Biosignal Interpretation*, New Haven, CT, USA. June 23-26, 2009;166-169.
12. **L Faes**, G Nollo, A Porta, 'Detection of causality in short term cardiovascular interactions: a method based on non-uniform embedding and conditional entropy' *6<sup>th</sup> European Study Group on Cardiovascular Oscillations*, Berlin, Germany. April 12-14, 2010.
13. **L Faes**, G Nollo, A Porta: 'Information-theoretic analysis of short-term cardiovascular variability in orthostatic syncope', *7<sup>th</sup> European Study Group on Cardiovascular Oscillations*, Kazimierz Dolny, Poland. April 22-25, 2012.
14. **L Faes**, G Nollo, KH Chon, JP Florian: 'Frequency domain assessment of baroreflex sensitivity from spontaneous heart period and systolic pressure variability following prolonged water immersion', *7<sup>th</sup> European Study Group on Cardiovascular Oscillations*, Kazimierz Dolny, Poland. April 22-25, 2012.
15. **L Faes**, S Erla, G Nollo, 'Block partial directed coherence: a new tool for the structural analysis of brain networks', *7<sup>th</sup> International Workshop on Biosignal Interpretation (BSI2012)*; Como, Italy. July 2-5, 2012;25-28.

#### **E. Abstracts in Indexed Journals**

1. G Nollo, **L Faes**, A Porta, M Del Greco, M Disertori, F Ravelli: 'Open loop model for non-invasive baroreflex sensitivity assessment in patients with recent myocardial infarction', *PACE* 1999; 22:A20 (Abstract).
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