Dr. Roman Rosipal

CONTACT INFORMATION

Department of Theoretical Methods
Institute of Measurement Science
Slovak Academy of Sciences
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Slovak Republic

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roman.rosipal@savba.sk

CITIZENSHIP

Slovak Republic

SCIENTIFIC RANK

Degree IIa (samostatný vedecký pracovník) - awarded 10/02/2006

EDUCATION

Ph.D., Computer Science, 2001
Department of Computing and Information Systems,
University of Paisley, Scotland, UK

M.Sc., Mathematics, 1999
Faculty of Mathematics and Physics,
Comenius University, Bratislava, Slovak Republic
- Area of Study: Probability and Mathematical Statistics & Numerical Analysis and Optimization

M.Sc., Electrical Engineering, 1993
Faculty of Electrical Engineering,
Czech Technical University, Prague, Czech Republic
- Area of Study: Technical Cybernetics

PROFESSIONAL EXPERIENCE

11/2011 - present

Department of Theoretical Methods
Institute of Measurement Sciences
Slovak Academy of Sciences, Bratislava, Slovakia
Senior Researcher

01/2007 - present

Pacific Development and Technology, LLC
Palo Alto, CA 94303
Chief Technology Officer (CTO)

01/2010 - 03/2011

Section for Artificial Intelligence
Center for Medical Statistics, Informatics, and Intelligent Systems
Medical University of Vienna, Vienna, Austria
Research Associate
Multi-sensor sleep modeling based on contextual data fusion; funded by FWF

10/2007 - 12/2009

Department of Medical Cybernetics and Artificial Intelligence,
Center for Brain Research
Medical University of Vienna, Vienna, Austria
Research Associate
Multi-sensor sleep modeling based on contextual data fusion; funded by FWF

11/2004 - 09/2007

Austrian Research Institute for Artificial Intelligence, Vienna, Austria
Research Associate
Generative probabilistic models for sleep-wakefulness research; funded by the integrated FP6-EU project Sensation

09/2005 - 10/2005

University of Birmingham, Birmingham, UK
School of Computer Science
Research Scholarship
Probabilistic modeling of the sleep process

10/2001 - 11/2004

NASA Ames Research Center, Moffett Filed, CA
Computational Sciences Division
Research Associate
Kernel-based learning, complexity measures, cognitive fatigue monitoring, brain computer interfaces using EEG and SSVEP

10/1998 - 10/2001

University of Paisley, Paisley, UK
Department of Computing and Information
Laboratories and tutorial assistant

06/2000 - 08/2000

RIKEN Brain Science Institute, Wako-Shi, Japan
Laboratory for Advanced Brain Signal Processing
Research Scholarship
Complexity measures, kernel-based learning, depth of anaesthesia monitoring

04/1998 - 06/1998

University of Vienna, Vienna, Austria
Department of Medical Cybernetics and Artificial Intelligence
Research Scholarship
Sleep-spindles detection research; part of the BIOMED-2 EU project SIESTA

01/1996 - 09/1998

Slovak Academy of Sciences, Bratislava, Slovakia
Institute of Measurement Sciences
Research Assistant
Theory of artificial neural networks, math. statistics, event related potentials

10/1994 - 12/1995

Institute of Bionics, Bratislava, Slovakia
Laboratory of simulation methods
Research Assistant
Simulation methods and math. statistics in health care, software development

Awards

2017: Award of the Slovak Academy of Sciences, Bratislava, Slovakia
Award of the SAS for the most cited publication
2012: Award of the Slovak Literary Fund, Bratislava, Slovakia
The 1st prize in the category of exceptional scientific response to one publication in the area of technical sciences and geosciences
2007: The Peter Fedor Award
The Jan Hus Educational Foundation, Bratislava, Slovakia
2003: Travel Grant
American Mathematical Society, Providence, RI
2001: Research Scholarship
National Research Council, Washington, DC
2000: Research Scholarship
RIKEN Brain Science Institute, Wako-Shi, Japan
2000: Research Poster Exhibition - award "Highly Commended"
University of Paisley, March 22
1998: Research Scholarship
Action Austria-Slovakia, Bratislava, Slovak Republic

Research Interests

- Research in the area of applied statistics, machine learning, computational and cognitive neuroscience
- Electrophysiological data analysis (EEG,EOG, EMG, ECG); event-related potentials (ERP); sleep process modelling; study of cognitive fatigue; brain-computer interfaces; attention, vigilance, drowsiness and fatigue monitoring; neurorehabilitation; neurofeedback
- Multivariate data analysis; latent variable regression, classification and dimensionality reduction methods; Dynamic Bayesian Networks for data fusion; nonlinear kernel learning and support vector machines

Research Projects

- ECoReMiR: Enhancing cognition and motor rehabilitation using mixed reality, Slovak Research and Development Agency, 2017-2021
- BCI-RAS: Brain-computer interface with robot-assisted training for rehabilitation, Slovak Research and Development Agency, 2013-2017
- SleepCog: Effects of sleep disturbances on day-time neurocognitive performance in patients with stroke, Slovak Ministry of Health, 2013-2015
- NOIT: Neurosensory Optimization of Information Transfer, US Army Research Office, 2011-2014
- STATGUM: Statistical methods for uncertainty analysis in metrology, Slovak Research and Development Agency, 2011-2014
- Multi-sensor Sleep Modeling Based on Contextual Data Fusion, The Austrian Science Fund, 2007-2010
- APECS: Advanced Physiological Estimation of Cognitive Status, US Army Research Office, 2008-2009
- BAMOD: Breath-gas Analysis for Molecular-oriented Detection of Minimal Diseases, FP6-European Union, 2006-2009
- SENSATION: Advanced Sensor Development for Attention, Stress, Vigilance & Sleep/Wakefulness Monitoring, FP6-European Union, 2004-2008

Editorial Board	Computer Methods and Programs in Biomedicine Advances in Chemoinformatics and Computational Methods Book Series, IGI Global
Journal Refereeing	Advances in Data Analysis and Classification; Artificial Intelligence in Medicine; BMC Bioinformatics; Biological Psychology; Biocybernetics and Biomedical Engineering; Computational Biology and Chemistry; Computational Statistics & Data Analysis; Computer Methods and Programs in Biomedicine; Electronic Journal of Statistics; IEEE Transactions on Affective Computing; IEEE Transactions on Automation Science and Engineering; IEEE Transactions on Biomedical Engineering; IEEE Transactions on Cybernetics; IEEE Transactions on Human-Machine Systems; IEEE Transactions on Knowledge and Data Engineering; IEEE Transactions on Neural Networks; IEEE Transactions on Pattern Analysis and Machine Intelligence; IEEE Transactions on Signal Processing; IEEE Transactions on Systems, Man and Cybernetics; Information Fusion; Information Sciences; International Journal of Adaptive Control and Signal Processing; Journal of Computational and Graphical Statistics; Journal of Machine Learning Research; Journal of Multivariate Analysis; Journal of Neural Engineering; Journal of Physics D: Applied Physics; Machine Learning; Measurement Science Review; Nature Human Behaviour; Neural Computing & Applications; Neural Networks; Neural Processing Letters; Neurocomputing; NeuroImage; Operational Research: An International Journal; Pattern Analysis & Applications; Physiological Measurement; PLOS One; Signal Image and Video Processing; Signal Processing; Soft Computing; Statistics and Computing; WIREs Computational Statistics
Program & Reviewing Committee	Biotechno (2008), Conference on Learning Theory (2003), European Medical and Biological Engineering Conference (2011), European Conference on Machine Learning (2004), IDEAL (2007,2010), IASTED International Conference on Artificial Intelligence and Applications (2010), International Conference on Machine Learning (2005), International Joint Conference on Neural Networks (2004, 2007), Neural Information Processing Systems (2002, 2004), International Conference on Partial Least Squares (2009), Twenty-first National Conference on Artificial Intelligence (2006), EUSIPCO (2007).

Invited Talks

2015, **May 27**
Cognition and artificial life XV, conference, Trencianske Teplice, Slovakia
The mirror neural system and the perceptual modulation of cortical motor oscillatory activity

2015, **February 5**
Winter school of cognitive psychology, Mala Skala, Czech Republic
Modulation of brain oscillatory rhythms: conceptual, experimental and algorithmic design

2014, **June 12**
MEi:CogSci Conference, Krakow, Poland
Modulation of sensory-motor rhythmic activities for improving BCI training in neurorehabilitation

2013, **February 25**
Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia
Multi-way modelling and analysis of high-dimensional EEG data

2012, **November 19**
Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava, Slovakia
Overview of linear and nonlinear partial least squares for regression and classification

2009, **April 15**
Center for Brain Research, Medical University of Vienna, Austria
Multimodal neuroelectric computer interfaces, invited talk to the USCKI Incognito group

2007, **December 19**
Faculty IV - Institute for Software Engineering and Theoretical Computer Science, TU Berlin, Germany
A new way of the sleep-wakefulness process analysis: modeling the process as a continuum

2007, **December 13**
Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia
EEG Analysis of the Selected Brain States: Brain-Computer Interface (BCI), The Peter Fedor Award Seminar

2007, **April 17**
Center for Brain Research, Medical University of Vienna, Austria
Towards a new way of sleep EEG analysis by modeling sleep depth as a continuum

2005, **February 24**
Subspace, Latent Structure and Feature Selection techniques: Statistical and Optimisation perspectives Workshop, Bohinj, Slovenia
Overview and some aspects of Partial Least Squares

2003, **September 10**
Department of Electrical Engineering and Computer Science, TU Berlin, Germany
Kernel-based Algorithms for EEG Data Processing: Emphasis on Partial Least Squares

2003, **July 27**
Redwood Neuroscience Institute, Menlo Park, CA
Signal Processing and Machine-learning Algorithms for Brain-Computer Interfaces (with Leonard J. Trejo)

2003, **April 28**
Department of Applied Mathematics & Statistics, UC Santa Cruz, CA
Signal Processing and Machine-learning Algorithms for Brain-Computer Interfaces (with Leonard J. Trejo)

2002, **November 5**
Statistics Department, UC Davis, CA
Kernel Partial Least Squares

2000, **August**
RIKEN Brain Science Institute, Wako-Shi, Japan
EEG Signal Processing for Depth of Anaesthesia Monitoring

1999, **November 2**
Department of Computing and Information Systems, University of Paisley, UK
Kernel PCA, Multi-layer SVR and other Kernel Methods

1998, **April**
Department of Medical Cybernetics and Artificial Intelligence, University of Vienna, Austria
ICA for sleep-spindle detection

PUBLICATIONS

Journal Papers

Rostakova Z., Rosipal R. (2018). Time Alignment as a Necessary Step in the Analysis of Sleep Probabilistic Curves. *Measurement Science Review, 18*, 1–6.

Teplan M., Bajla I., Rosipal R., Rusnak M. (2017). Feature clustering of intracranial pressure time-series for an alarm function estimation in traumatic brain injury. *Physiological Measurement, 38*, 2015–2043.

Trejo L.J., Kubitz K., Rosipal R., Kochavi R.L., Montgomery L.D.(2015) EEG-Based Estimation and Classification of Mental Fatigue. *Psychology, 6*, 572–589.

Rosipal R., Lewandowski A., & Dorffner G. (2013). In search of objective components for sleep quality indexing in normal sleep. *Biological Psychology, 94*, 210–220.

Lewandowski A., Rosipal R., & Dorffner G. (2013). On the Individuality of Sleep EEG Spectra . *Journal of Psychophysiology, 27*, 105–112.

Lewandowski, A., Rosipal, R. & Dorffner G. (2012). Extracting more information from EEG recordings for a better description of sleep. *Computer Methods and Programs in Biomedicine, 108*, 961–972.

Trejo, L.J., Rosipal, R. & Matthews, B. (2006). Brain-Computer Interfaces for 1-D and 2-D Cursor Control: Designs using Volitional Control of the EEG Spectrum or Steady-State Visual Evoked Potentials. *IEEE Transactions on Neural Systems and Rehabilitation Engineering, 14*, 225–229.

Rosipal, R. (2003). Kernel Partial Least Squares for Nonlinear Regression and Discrimination. *Neural Network World, 13*, 291–300.

Trejo, L. J., Wheeler, K. R., Jorgensen, C. C., Rosipal, R., Clanton, S. T., Matthews, B., Hibbs, A. D., Matthews, R., & Krupka, M. (2003). Multimodal Neuroelectric Interface Development. *IEEE Transactions on Neural Systems and Rehabilitation Engineering, 11*, 199–204.

Rosipal, R., & Trejo, L. J. (2001). Kernel Partial Least Squares Regression in Reproducing Kernel Hilbert Space. *Journal of Machine Learning Research, 2*, 97–123.

Rosipal, R., Girolami, M., Trejo, L. J., & Cichocki, A. (2001). Kernel PCA for Feature Extraction and De-Noising in Nonlinear Regression. *Neural Computing & Applications, 10*, 231–243.

Rosipal, R., & Girolami, M. (2001). An Expectation-Maximization Approach to Nonlinear Component Analysis. *Neural Computation, 13*, 505–510.

Rosipal, R., Dorffner, G., & Trenker, E. (1998). Can ICA improve sleep-spindles detection? *Neural Network World, 8*, 539–547.

Rosipal, R., Koska, M., & Farkaš, I. (1998). Prediction of Chaotic Time-Series with a Resource-Allocating RBF Network. *Neural Processing Letters, 7*, 185–197.

Book Chapters

Rosipal R. (2011). Nonlinear Partial Least Squares: An Overview. In *Chemoinformatics and Advanced Machine Learning Perspectives: Complex Computational Methods and Collaborative Techniques*, Lodhi H., Yamanishi Y. (eds.), ACCM, IGI Global, pp. 169–189.

Rosipal, R., & Krämer, N. (2006). Overview and Recent Advances in Partial Least Squares. In *Subspace, Latent Structure and Feature Selection Techniques*, Series: Lecture Notes in Computer Science , Vol. 3940, Saunders C., Grobelnik M., Gunn S., Shawe-Taylor J. (eds.), Springer, pp. 34–51.

De Bie, T., Cristianini, N., & Rosipal, R. (2005). Eigenproblems in Pattern Recognition. In *Handbook of Geometric Computing: Applications in Pattern Recogni-*

tion, Computer Vision, Neuralcomputing, and Robotics, Bayro-Corrochano E. (eds.), Springer, pp. 129–170.

Fyfe, C., MacDonald, D., Lai, P. L., Rosipal, R., & Charles, D. (2001). Unsupervised learning using radial kernels. In *Radial Basis Function Networks 1: Recent Developments in Theory and Applications*, Series: Studies in Fuzziness and Soft Computing , Vol. 66, Howlett R. J., Jain L. C., Kacprzyk J. (eds.), Physica-Verlag, pp. 193–218.

Koska, M., Rosipal, R., Konig, A., & Trejo, L. J. (1997). Estimation of human signal detection performance from event-related potentials using feed-forward neural network model. In *Computer Intensive Methods in Control and Signal Processing: The Curse of Dimensionality*, Warwick K., Karny M. (eds.), Birkhauser, pp. 271–282.

Conference Papers

Korecko S., Hudak M., Sobota B., Marko M., Cimrova B., Farkas I., Rosipal R. (2018) Assessment and training of visuospatial cognitive functions in virtual reality: proposal and perspective. In *Proceedings of CogInfoCom: The 9th IEEE International Conference on Cognitive InfoCommunications*, Budapest, Hungary, pp. 39-43.

Rostakova Z., Dorffner G., Aydemir O., Rosipal R. (2017). Estimation of Sleep Quality by Using Microstructure Profiles. In *Artificial Intelligence in Medicine (AIME 2017)*, Lecture Notes in Computer Science, Springer, ten Teije A. et al (eds.), vol. 10259, pp. 105–115.

Rostakova Z., Rosipal R. (2017). Importance of the Time Alignment of the Sleep Probabilistic Curves. In *Proceedings of Measurement '17*, Manka J., Tysler M., Witkovsky V., Frollo I. (eds.), Smolenice, Slovakia, pp. 27–30.

Krakovska A., Skoviera R., Rosipal R. (2017). Spectral, Complexity and Interdependence Measures of Sleep EEG after Ischemic Stroke. In it Proceedings of Measurement '17, Manka J., Tysler M., Witkovsky V., Frollo I. (eds.), Smolenice, Slovakia, pp. 245–249.

Krakovska A., Skoviera R., Dorffner G., Rosipal R. (2015). Does the Complexity of Sleep EEG Increase or Decrease with Age? In it Proceedings of Measurement '15, Manka J., Tysler M., Witkovsky V., Frollo I. (eds.), Smolenice, Slovakia, pp. 77–80.

Bui T.M.P., Rosipal R. (2014). Differences in Sleep Patterns Among Healthy Sleepers and Patients After Stroke. In *Proceedings of YBERC: The Sixth Biomedical Conference of Young Biomedical Engineers and Researchers*, Bratislava, Slovakia, pp. 40-45.

Skoviera R., Rostakova Z., Krakovska A., & Rosipal R. (2014) . Spectral and Complexity Characteristics of Sleep EEG Following Ischemic Stroke. In *Proceedings of YBERC: The Sixth Biomedical Conference of Young Biomedical Engineers and Researchers*, Bratislava, Slovakia, pp. 108-114.

Teplan M., Bajla I., Rosipal R., & Rusnak M. (2014) . Intracranial Pressure of Patients After Severe Traumatic Brain Injury: A Pilot Study for Lethality Estimation from Time Series. In *Proceedings of YBERC: The Sixth Biomedical Conference of Young Biomedical Engineers and Researchers*, Bratislava, Slovakia, pp. 89-92.

Rosipal R., Trejo L. J., & Zaidel E. (2013) . Atomic Decomposition of EEG for Mapping Cortical Activation. In *TML: Tensor Methods for Machine Learning, ECML/PKDD 2013 Workshop*, Prague, Czech Republic.

Rosipal R. (2013). Clustering probabilistic sleep microstate curves: a functional data analysis approach. In *Proceedings of Measurement '13*, Smolenice, Slovakia, pp. 101–104.

Rosipal R., Trejo L. J., & Nunez P. L. (2009). Application of Multi-way EEG Decom-

position for Cognitive Workload Monitoring. In *Proceedings of the 6th International Conference on Partial Least Squares and Related Methods*, Vinzi V. E, Tenenhaus M., Guan R. (eds.), Beijing, China, pp. 145–149.

Rosipal, R., Peters, B., Kecklund, G., Åkerstedt, T., Gruber, G., Woertz, M., Anderer, P., & Dorffner, G. (2007). EEG-based Drivers' Drowsiness Monitoring using a Hierarchical Gaussian Mixture Model. In *Proceedings of 13th International Conference on Human Computer Interaction*, Series: Lecture Notes in Artificial Intelligence, Vol. 4565, Schmorrow D. D, Reeves L. M.(eds.): Augmented Cognition, HCII 2007, Beijing, China, pp. 294–303, Springer.

Trejo, L. J., Knuth, K., Prado, R., Rosipal, R., Kubitz, K.,Kochavi R., Matthews, B., & Zhang, Y. (2007). EEG-based Estimation of Mental Fatigue: Convergent Evidence for a Three-State Model. In *Proceedings of 13th International Conference on Human Computer Interaction*, Series: Lecture Notes in Artificial Intelligence, Vol. 4565, Schmorrow D. D, Reeves L. M.(eds.): Augmented Cognition, HCII 2007, Beijing, China, pp. 201–21, Springer.

Trejo, L. J., Kochavi, R., Kubitz, K., Montgomery, L. D., Rosipal, R., & Matthews, B. (2005). EEG-based estimation of cognitive fatigue. In *Proceedings of SPIE Vol. 5797: Biomonitoring for Physiological and Cognitive Performance During Military Operations*, SPIE Defense & Security Symposium, pp. 105–115, Orlando, FL.

Wallerius, J., Trejo, L. J, Matthews, R., Rosipal, R., & Caldwell, J. A. (2005). Robust feature extraction and classification of EEG spectra for real-time classification of cognitive state. In *Proceedings of 11th International Conference on Human Computer Interaction*, Las Vegas, NV.

Rosipal, R., Trejo, L. J., Matthews, B., & Wheeler, K. (2003). Nonlinear Kernel-Based Chemometric Tools: a Machine Learning Approach. In *Proceedings of 3rd International Symposium on PLS and Related Methods (PLS'03)*, pp.249–260, Lisbon, Portugal.

Rosipal, R., Trejo, L. J., & Matthews, B. (2003). Kernel PLS-SVC for Linear and Nonlinear Classification. In *Proceedings of the Twentieth International Conference on Machine Learning (ICML-2003)*, pp. 640–647, Washington DC.

Rosipal, R., Girolami, M., & Trejo, L. J. (2000). Kernel PCA Feature Extraction of Event-Related Potentials for Human Signal Detection Task. In *Artificial Neural Networks in Medicine and Biology, (Proceedings of the ANNIMAB-1 Conference)*, Series: Perspectives in Neural Computing, pp. 321–326, Springer.

Barros, A. K., Rosipal, R., Girolami, M., Dorffner, G., & Ohnishi, N. (2000). Extraction of Sleep-Spindles from the Electroencephalogram (EEG). In *Artificial Neural Networks in Medicine and Biology, (Proceedings of the ANNIMAB-1 Conference)*, Series: Perspectives in Neural Computing, pp. 125–130, Springer.

Rosipal, R., & Girolami, M. (1999). An Adaptive Support Vector Regression Filter: A Signal Detection Application. In *Proceedings of International Conference on Artificial Neural Networks (ICANN)*, vol 2, pp. 603–607, Edinburgh, Scotland, UK.

Rosipal, R., Koska, M., & Farkaš, I. (1997). Chaotic time-series prediction using resource-allocating RBF networks. In *Proceedings of Conference Measurement '97*, Smolenice, Slovakia.

Popper, M., Guregová, M., & Rosipal, R. (1995). Discrete event simulation: Hospital department resource identification. In *Advanced simulation of systems, XVIIth International Czech-Poland-Slovak Colloquium-Workshop*, vol 2, pp. 45–51, Zabreh na Morave, Czech Republic.

Posters & Talks

Rosipal R., Trejo L.J., Rostakova Z, Cimrova B. (2018). Atomic Decomposition of Human EEG Oscillations In Medical Research And Pharmaceutical Trials. talk at

The 20th Biennial IPEG Meeting, Zurich, Switzerland, November 21-25.

Dorffner G., L. Pichler L., Gruber G., Rostakova Z., Rosipal R. (2018). Sleep architecture in stroke patients compared to healthy individuals. poster presented at *The 24th Congress of the European Sleep Research Society (ESRS'18)*, Basel, Switzerland, September 25-28, 2018. *Journal of Sleep Research*, 27 (Suppl. 1, P473):308-308.

Rostakova Z., Rosipal R. (2018). Relationship between sleep structure of patients after ischemic stroke and daily measures. poster presented at *The 24th Congress of the European Sleep Research Society (ESRS'18)*, Basel, Switzerland, September 25-28. *Journal of Sleep Research*, 27 (Suppl. 1, P117):144-145.

Rosipal R., Porubcova N., Cimrova B., Farkas I. (2018). Mirror-therapy as a way to start BCI robot-assisted rehabilitation: a single case longitudinal study of a patient with hemiparesis. poster presented at *The Seventh International BCI Meeting*, Pacific Grove, CA, USA, May 21-25.

Rosipal R., Porubcova N., Barancok P., Cimrova B., Teplan M., Farkas I. (2017). Brain-computer interface with robot-assisted training for neurorehabilitation. poster presented at *International Conference on Artificial Neural Networks (ICANN)*, Alghero, Italy, September 11-14. *Artificial Neural Networks and Machine Learning - ICANN 2017*, Theoretical Computer Science and General Issues, Springer, Lintas A. et al (eds.), vol. 10613, pp. 418–418, 2017.

Rostakova Z., Rosipal R. (2017). Multilevel Functional Principal Component Analysis for Unbalanced Data. pdf document talk at *20th European Young Statisticians Meeting*, Uppsala, Sweden, August 14-18.

Rostakova Z., Rosipal R. (2017). Multilevel functional principal components analysis in the case of unbalanced design and small number of subjects. talk at *Olomoucian Days of Applied Mathematics (ODAM 2017)*, Olomouc, Czech Republic, May 31-June 2.

Rosipal R., Trejo L.J., Wallerius J., Apparies R., Cimrova B, Miller J. (2016). Whole-brain time-frequency analysis of event-related potentials for the assessment of pharmacodynamic effects in the human brain. talk at *The 19th Biennial IPEG Meeting*, Nijmegen, Holland, October 25-30. *Neuropsychiatric Electrophysiology, 2*, (Suppl. 1):17–17, 2016.

Rostakova Z., Rosipal R., Dorffner G. (2016). Continuous sleep profiles clustering with a novel 2-step functional data approach. poster presented at The 23rd Congress of the European Sleep Research Society (ESRS'16), Bologna, Italy, September 13-16. *Journal of Sleep Research, 25*, (Suppl. 1, P508):251–25.

Cimrova B., Rostakova Z., Dolezalova M.V., Rybar J., Igor Farkas I.,Rosipal R. (2016). Linking the quality of sleep and cognitive performance in stroke patients. poster presented at *The 23rd Congress of the European Sleep Research Society (ESRS'16)*, Bologna, Italy, September 13-16. *Journal of Sleep Research, 25*, (Suppl. 1, P516):253–254, 2016.

Rostakova Z., Rosipal R. (2016). A novel 2-step iterative approach for clustering functional data. poster presented at *The 22nd International Conference on Computational Statistics (COMPSTAT)*, Oviedo, Spain, August 23-26. *Book of Abstracts, COMPSTAT 2016*, CP0505:61–61, 2016.

Rostakova Z., Rosipal R. (2015). Differences in sleep microstate curves among healthy sleepers and patients after stroke. pdf document poster presented at *The 15th European Congress on Clinical Neurophysiology*, Brno, Czech Republic, Sept. 30-Oct. 3. *Clinical Neurophysiology, 127(3)*, e126, 2016.

Rosipal R., Porubcova N., Barancok P., Cimrova B., Farkas I. (2015). Mirror-box Training in Healthy Subjects and a Patient with Hemiparesis. pdf document poster presented at *The 15th European Congress on Clinical Neurophysiology*, Brno, Czech

Republic, Sept. 30-Oct. 3. *Clinical Neurophysiology, 127(3)*, e53, 2016.

Rosipal R. (2014). Modulation of sensory-motor rhythmic activities for improving BCI training in neurorehabilitation. invited talk at *MEi:CogSci Conference*, Krakow, Poland, June 12–14.

Zaidel E., Rosipal R., Hill A., Fernandes N., Akbarut R., Noh S., & Trejo L.J. (2013). Modeling EEG-band Neurofeedback: Modulating Internal States without Conditioning of EEG Sources. talk at *ISNR 21st Annual Conference*, Dallas, TX, September 18–22.

Rosipal R. (2012). Multilevel functional clustering analysis of probabilistic sleep microstate curves. poster presented at *The 5th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2012)*, Oviedo, Spain, December 1 - 3.

Trejo L.J., Rosipal R., & Nunez P.L. (2010) Advanced Physiological Estimation of Cognitive Status. poster presented at *The 27th Army Science Conference*, Orlando, Florida.

Rosipal R., Lewandowski A., & Dorffner G. (2010). From polysomnography to sleep parameters indexing sleep quality and sleep related physiological and psychometric factors. talk at *The 20th Congress of the European Sleep Research Society (ESRS'10)*, Lisbon, Portugal.
Journal of Sleep Research, 19, (Suppl. 2, O290):86–86, 2010.

Lewandowski A., Rosipal R., & Dorffner G. (2009). Continuous probabilistic modelling of the sleep process. poster presented at *Complex Dynamics in Large-Scale Interacting Brain Systems: Towards Physical Models of Sleep and Consciousness*, MPIPKS, Dresden, Germany.

Rosipal, R., Peters, B., Kecklund, G., Åkerstedt, T., Gruber, G., Woertz, M., Anderer, P., & Dorffner, G. (2007). Probabilistic framework for EEG-based drowsiness and vigilance monitoring. talk at *Monitoring sleep and sleepiness with new sensors within medical and industrial applications (SENSATION 2nd International Conference)*, Crete, Greece, 2007.

Rosipal, R., Neubauer, S., Anderer, P., Gruber, G., Parapatics, S., Woertz, M., & Dorffner, G. (2006). A continuous probabilistic approach to sleep and daytime sleepiness modeling. poster presented at *The 18th Congress of the European Sleep Research Society (ESRS'06)*, P299, Innsbruck, Austria.
Journal of Sleep Research, 15, (Suppl. 1, P299):169–169, 2006.

Woertz, M., Anderer, P., Gruber, G., Parapatics, S., Rosipal, R., Saletu, B., & Dorffner, G. (2006). Agreement of apnea-hypopnea indexes based on visual and automatic detection. poster presented at *The 18th Congress of the European Sleep Research Society (ESRS'06)*, P244, Innsbruck, Austria.
Journal of Sleep Research, 15, (Suppl. 1, P244):169–169, 2006.

Dorffner, G. , Rosipal, R., Neubauer, S., Gruber G., & Anderer, P. (2006). Sleep quality in healthy subjects - What can PSG really tell us? talk at *Monitoring Sleep and Sleepiness - from Physiology to New Sensors (SENSATION 1st International Conference)*, Basel, Switzerland.

Rosipal R., Neubauer S., Anderer P., Gruber G., Parapatics S., Woertz M., & Dorffner G. (2006). A hierarchical Gaussian mixture model for continuous high-resolution sleep analysis. talk at *Monitoring Sleep and Sleepiness - from Physiology to New Sensors (SENSATION 1st International Conference)*, Basel, Switzerland.

Woertz, M., Gruber, G., Parapatics, S., Anderer, P., Miazhynskaia, T., Rosipal, R., Saletu, B., & Dorffner, G. (2005). Automatic sleep apnea detection and its application in patients of the siesta database adaptation night effects. poster presented at *The 13th German Sleep Society Annual Meeting, (DGSM'05)*, PO-41, Berlin,

Germany.

Woertz M., Gruber G., Parapatics S., Anderer P., Miazhynskaia T., Rosipal R., Saletu B., & Dorffner G. (2005). Automatic sleep apnea detection: analysis of apnea distribution with respect to sleep stages, depending on the severity of sleep apnea. poster presented at *The First Congress of the World Association of Sleep Medicine, (WASM'05)*, P-083, Berlin, Germany.

Trejo, L. J., Matthews, B., & Rosipal, R. (2005). Brain-Computer Interfaces for 1-D and 2-D Cursor Control: Designs using Volitional Control of the EEG Spectrum or Steady-State Visual Evoked Potentials. poster presented at *Brain-Computer Interface Technology. Third International Meeting*, Rensselaerville, NY.

Trejo, L. J., Kochavi, R., Kubitz, K, Montgomery, L. D., Rosipal, R., & Matthews B. (2004). Measures and Models for Estimating and Predicting Cognitive Fatigue. poster presented at *44th Society for Psychophysiological Research Annual Meeting (SPR'04)*, Santa Fe, NM.
Psychophysiology, 41, S86, Suppl. 1, 2004.

Rosipal, R., & Trejo, L.J. (2004). Kernel PLS Estimation of Single-trial Event-related Potentials. poster presented at *44th Society for Psychophysiological Research Annual Meeting (SPR'04)*, Santa Fe, NM.
Psychophysiology, 41, S94, Suppl. 1, 2004.

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