Publications

Denis SHEYNIKHOVICH

Summary

	Pubications	First author
International peer-reviewed journals	13	6 [1]
International peer-reviewed conferences	5	2
National peer-reviewed conferences	4	2
Abstracts at international conferences	9	5
Book chapters	1	1
Total	**32**	**16**

International peer-reviewed journals

[1] **D. Sheynikhovich**, S. Otani, and A. Arleo. Dopaminergic control of long-term depression/long-term potentiation threshold in prefrontal cortex. *Journal of Neuroscience*, 33(34) :13914–13926, 2013.

[2] J.-B. Passot, **D. Sheynikhovich**, E. Duvelle, and A. Arleo. Contribution of cerebellar sensorimotor adaptation to hippocampal spatial memory. *PLoS ONE*, 7(4) :e32560, 2012.

[3] **D. Sheynikhovich**, S. Otani, and A. Arleo. The role of tonic and phasic dopamine for long-term synaptic plasticity in the prefrontal cortex : a computational model. *Journal of Physiology – Paris*, 105(1-3) :45–52, 2011.

[4] L.-E. Martinet, **D. Sheynikhovich**, K. Benchenane, and A. Arleo. Spatial learning and action planning in a prefrontal cortical network model. *PLoS Computational Biology*, 7(5) :e1002045, 2011.

[5] **D. Sheynikhovich** and A. Arleo. A reinforcement learning approach to model interactions between landmarks and geometric cues during spatial learning. *Brain Research*, 1365 :35–47, 2010.

[6] L. Dollé, **D. Sheynikhovich**, D., B. Girard, R. Chavarriaga, and A. Guillot. Path planning versus cue responding : a bioinspired model of switching between navigation strategies. *Biological Cybernetics*, 103(4) :299–317, 2010.

[7] **D. Sheynikhovich**, R. Chavarriaga, T. Strösslin, A. Arleo, and W. Gerstner. Is there a geometric module for spatial orientation ? Insights from a rodent navigation model. *Psychological Review*, 116 (3) :540–566, 2009.

[8] **D. Sheynikhovich**, R. Chavarriaga, T. Strösslin, and W. Gerstner. Adaptive sensory processing for efficient place coding. *Neurocomputing*, 69(10-12) :1211–1214, 2006.

[9] R. Chavarriaga, T. Strösslin, **D. Sheynikhovich**, and W. Gerstner. A computational model of parallel navigation systems in rodents. *Neuroinformatics*, 3(3) :223–242, 2005.

[10] R. Chavarriaga, T. Strösslin, **D. Sheynikhovich**, and W. Gerstner. Competition between cue response and place response : A model of rat navigation behaviour. *Connection Science*, 17(1–2) : 167–183, 2005.

[11] T. Strösslin, **D. Sheynikhovich**, R. Chavarriaga, and W. Gerstner. Robust self-localisation and navigation based on hippocampal place cells. *Neural Networks*, 8(19) :1125–1140, 2005.

---

1. Ref. Dollé, Sheynikhovich, Girard, Chavarriaga and Guillot 2010 : Joint first authorship

[12] I. Gurov and **D. Sheynikhovich**. Interferometric data analysis based on Markov non-linear filtering methodology. *Journal of the Optical Society of America A*, 17(1) :21–27, 2000.

[13] I. Gurov and **D. Sheynikhovich**. Calculating of phase characteristics of interferometric pattern by the method of Markov non-linear filtering. *Optics and Spectroscopy*, 83(1) :147–152, 1997.

International peer-reviewed conferences

[1] **D. Sheynikhovich**, F. Grèzes, J.-R. King, and A. Arleo. Exploratory behaviour depends on multisensory integration during spatial learning. In *Artificial Neural Networks and Machine Learning – ICANN 2012. Lecture Notes in Computer Science*, volume 7552, pages 296–303, Lausanne, Suisse, 2012. Springer.

[2] **D. Sheynikhovich**, L. Dollé, R. Chavarriaga, and A. Arleo. Minimal model of strategy switching in the plus-maze navigation task. In S. Doncieux, B. Girard, A. Guillot, J. Hallam, J.-A. Meyer, and J.-B. Mouret, editors, *LNCS - From Animals to Animats 11, 11th International Conference on Simulation of Adaptive Behavior, SAB 2010, Paris - Clos Lucé, France, August 25-28, 2010. Proceedings.*, volume 6226, pages 390–401, Heidelberg, 2010. Springer-Verlag.

[3] L. Dollé, **D. Sheynikhovich**, B. Girard, B. Ujfalussy, R. Chavarriaga, and A. Guillot. Analyzing interactions between cue-guided and place-based navigation with a computational model of action selection : Influence of sensory cues and training. In S. Doncieux, B. Girard, A. Guillot, J. Hallam, J.-A. Meyer, and J.-B. Mouret, editors, *LNCS - From Animals to Animats 11, 11th International Conference on Simulation of Adaptive Behavior, SAB 2010, Paris - Clos Lucé, France, August 25-28, 2010. Proceedings.*, volume 6226, pages 335–346. Springer-Verlag, 2010.

[4] G. Lukšys, J. Knüsel, **D. Sheynikhovich**, C. Sandi, and W. Gerstner. Effects of stress and genotype on meta-parameter dynamics in reinforcement learning. In B. Schölkopf, J. Platt, and T. Hoffman, editors, *Advances in Neural Information Processing Systems 19*, pages 937–944. MIT Press, Cambridge, MA, 2007.

[5] T. Strösslin, R. Chavarriaga, **D. Sheynikhovich**, and W. Gerstner. Modelling path integrator recalibration using hippocampal place cells. In W. Duch, J. Kacprzyk, and E. Oja, editors, *Artificial Neural Networks : Biological Inspirations - ICANN 2005, Part I*, LNCS 3696, pages 51–56, Berlin Heidelberg, 2005. Springer-Verlag.

National peer-reviewed conferences

[1] **D. Sheynikhovich**, S. Otani, and A. Arleo. A modeling study of the role of tonic vs. phasic dopamine input to the prefrontal cortex. In Neurocomp, editor, *Proceedings of the fifth french conference on Computational Neuroscience, Lyon*, pages 77–82, 2010. ISBN 978-2-9532965-1-8. URL http://2010.neurocomp.fr.

[2] **D. Sheynikhovich**, S. Otani, and A. Arleo. Role of dopamine for long-term plasticity in the rat prefrontal cortex : a computational model. In S. Renaud and S. Saïghi, editors, *Neurocomp'09, Computational Neuroscience : From Multiple levels to Multi-level*, page 30, Bordeaux, France, 2009.

[3] L.-E. Martinet, **D. Sheynikhovich**, and A. Arleo. A cortical column model for studying spatial navigation planning. In S. Renaud and S. Saïghi, editors, *Neurocomp'09, Computational Neuroscience : From Multiple levels to Multi-level*, page 24, Bordeaux, France, 2009.

[4] J.-B. Passot, A. Arabo, **D. Sheynikhovich**, L. Rondi-Reig, and A. Arleo. Studying the role of the cerebellum in spatial cognition through a neurocomputational approach. In S. Renaud and S. Saïghi, editors, *Neurocomp'09, Computational Neuroscience : From Multiple levels to Multi-level*, page 26, Bordeaux, France, 2009.

Abstracts at international conferences

[1] **D. Sheynikhovich**, S. Otani, and A. Arleo. The computational role of dopamine in LTP/LTD threshold modulation in the prefrontal cortex. In *FENS Forum Abstracts*, 2012.

[2] **D. Sheynikhovich**, S. Otani, and A. Arleo. The role of dopamine in long-term plasticity in the rat prefrontal cortex : a computational model. In *Frontiers in Neuroscience, Conference Abstract : Computational and Systems Neuroscience (Cosyne 2010)*, volume 4, page 5, 2010.

[3] **D. Sheynikhovich**, S. Otani, and A. Arleo. The role of dopamine in long-term plasticity in the rat prefrontal cortex : a computational model. In *FENS Abstr.*, volume 5, page 103.60, 2010.

[4] L.-E. Martinet, **D. Sheynikhovich**, J.-A. Meyer, and A. Arleo. Multimodal encoding in a cortical model for spatial navigation planning. In *BMC Neuroscience - Eighteenth Annual Computational Neuroscience Meeting*, volume 10 (Suppl 1), page 338, Berlin, Germany, 2009.

[5] R. Chavarriaga, **D. Sheynikhovich**, and W. Gerstner. A feed-forward model of spatial and directional selectivity of hippocampal place cells. In *Fifteenth Annual Computational Neuroscience Meeting CNS*2006 abstracts*, page 41, Edinburgh, Scotland, 2006.

[6] R. Chavarriaga, **D. Sheynikhovich**, T. Strösslin, and W. Gerstner. A feed-forward model of spatial and directional selectivity of hippocampal place cells. In *Computational and Systems Neuroscience (Cosyne 2006) Abstracts book*, Salt Lake City, USA, 2006.

[7] D. **D. Sheynikhovich**, R. Chavarriaga, and W. Gerstner. Spatial reorientation and environment geometry : extraction of global parameters from local visual features. In *FENS Forum Abstracts*, volume 3, page A127.30, 2006.

[8] D. **D. Sheynikhovich**, R. Chavarriaga, T. Strösslin, and W. Gerstner. Adaptive sensory processing for efficient place coding. In *Fourteenth Annual Computational Neuroscience Meeting CNS*2005 abstracts*, page 75, Madison, USA, 2005.

[9] T. Strösslin, R. Chavarriaga, D. **D. Sheynikhovich**, and W. Gerstner. Modeling hippocampal map realignment by interactions between path integration and visual cues. In *Computational and Systems Neuroscience (Cosyne 2005) Abstracts book*, Salt Lake City, USA, 2005.

Book chapters

[1] **D. Sheynikhovich**, R. Chavarriaga, T. Strösslin, and W. Gerstner. Spatial representation and navigation in a bio-inspired robot. In S. Wermter, G. Palm, and M. Elshaw, editors, *Biomimetic Neural Learning for Intelligent Robots*, volume 3575 of *Lecture Notes in Artificial Intelligence*, pages 245–264. Springer-Verlag GmbH, 2005.