



Oberseminar SS'03

„Lernen und Gedächtnis“



Themen und Literaturliste

Blockseminar „Computational Neuroscience V: Lernen und Gedächtnis“

am Fr./Sa. 27./28. Juni 2003 im ITB-Seminarraum

Prof. Dr. A. V. M. Herz, Dr. L. Wiskott, Dr. R. Kempfer

Grundlegende Literatur:

- Kandel ER, Schwarz JH & Jessell TM (1995) *Neurowissenschaften*, Spektrum Akademischer Verlag, Heidelberg, pp. 667-684.
- Hammond C. (2001) *Cellular and Molecular Neurobiology*, Academic Press, San Diego, pp. 451-471.

Themen:

1. The nature of explicit and implicit memory.
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Milner B, Squire LR & Kandel ER (1998) *Neuron* **20**:445-468.
2. Anatomy and physiology of the hippocampus.
Amaral DG (1993) *Curr. Opin. Neurobiol.* **3**:225-229.
Hammond C. (2001) *Cellular and Molecular Neurobiology*, Academic Press, San Diego, pp. 451-471.
3. Molecular bases of learning and memory: long term synaptic plasticity.
Malenka RC, Nicoll RA (1999) *Science* **285**:1870-1874.
Bear MF, Connors BW & Paradiso MA (2001) *Neuroscience: Exploring The Brain*. Lippincott Williams & Wilkins, Baltimore, MA, pp. 791-807.
4. Declarative memory, memory (re) consolidation, and the hippocampus.
Myers KM & Davis (2002) *Neuron* **36**:340-343.
Debiec J, LeDoux JE & Nader K (2002) *Neuron* **36**:527-538.
Milekic MH & Albertini CM (2002) *Neuron* **36**:521-525.
5. Hippocampus as an autoassociative memory.
Treves A & Rolls ET (1994) *Hippocampus* **4**:374-391.
6. Computing with sequences.
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7. Place cells: how taxi drivers find their way.
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Maguire AM *et al.* (2000) *Proc. Natl. Acad. Sci. USA* **97**:4398-4403.
8. Decoding place cells.
Samsonovich A & McNaughton BL (1997) *J. Neurosci.* **17**:5900-5920.
Brown EN *et al.* (1998) *J. Neurosci.* **18**:7411-7425.
9. Hippocampal rhythms.
O'Keefe J & Recce ML (1993) *Hippocampus* **3**:317-330.
Jeffreys GRJ, Traub RD & Whittington MA (1996) *Trends Neurosci.* **19**:202-208.
Chrobak JJ & Buzsáki G (1996) *J. Neurosci.* **16**:3056-3066.
10. Sleep and playback of stored sequences.
Wilson MA (2002) *Neurobiol. Learn. Mem.* **78**: 565-569.
Wilson MA & McNaughton B (1994) *Science* **265**:676-679.
Louie K & Wilson MA (2001) *Neuron* **29**:145-156.

Weitere Themen:

11. The neural basis of perceptual learning.
Gilbert CD, Sigman M & Crist RE (2001) *Neuron* **31**:681-697.
12. Classical conditioning and reinforcement learning.
Dayan P & Abbott LF (2001) *Theoretical Neuroscience*, MIT Press, Cambridge, MA, pp. 331-358.
(see also: Sutton RS & Barto AG (1998) *Reinforcement Learning*, MIT Press, Cambridge, MA)
13. Catastrophic interference.
McClelland JL, McNaughton BL & O'Reilly RC (1995) *Psych. Rev.* **102**:419-457.
French RM (1997) *Connection Science* **9**:353-379.
Ans B & Rousset S (1997) *C. R. Acad. Sci. Paris, Sciences de la Vie*, **320**:989-997.
14. Different modes of processing.
Paulsen O & Moser EI (1998) *Trends Neurosci.* **21**: 273-278.
Yeckel MF & Berger TW (1998) *J. Neurosci.* **18**:438-450.
15. Early theories of hippocampal function.
Marr D (1971) *Phil. Trans. Roy. Soc. Lond.* **B 262**:23-81.
Gardner-Medwin AR (1976) *Proc. R. Soc. London B Biol. Sci.*, **194**:375-402.
16. Quantitative analysis of hippocampal autoassociative memory: dilute 'spin-glass' network theory and information-theoretic estimates.
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17. Dream-wake theory.
Hinton GE, Dayan P, Frey BJ, & Neal RM (1995) *Science* **268**:1158-1161.

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