

Oberseminar: Winter Semester 2011-2012

**Brain and Cognition: Exploring the relations between structure, dynamics and function of biological neural networks**

[@ Lecture Hall 1st Floor, BCF, Hansastr 9A]

**Feb 24, 2012 (1400-1715hrs)**

**Yi Min**  
1400-1425 Newman (2003) The structure and function of complex networks, SIAM Review 45, 167-256

**Sadra Sadeh**  
1430-1455 Bullmore, E.T, Sporns, O. (2009) Complex brain networks: graph-theoretical analysis of structural and functional systems. *Nature Reviews Neuroscience* 10, 186-198.

**Ajith Padmanabhan**  
1500-1525 Meunier (2011) Modular and hierarchically modular organization of brain networks. *Front. Neurosci.* 4:200. doi: 10.3389/fnins.2010.00200

**Alejandro Bujan (NOT PRESENT)**

Kriener et al. (2009) Correlations in spiking neuronal networks with distance dependent connections. *J Comput Neurosci* 27 : 177-200

Roxin A (2011) The role of degree distribution in shaping the dynamics in networks of sparsely connected spiking neurons. *Front. Comput. Neurosci.* 5:8. doi: 10.3389/fncom.2011.00008

**Coffee Break**

**Renato Duarte**  
1545-1610 Varshney et al (2011) Structural properties of the *Caenorhabditis elegans* neuronal network. *PLoS Comput Biol*, vol. 7, no. 2, e1001066

**Mihael Zohar**  
1615-1640 Bonifazi, et al. (2009) GABAergic hub neurons orchestrate synchrony in developing hippocampal networks. *Science* 326, 1419

**Desiree Loreth**  
1645-1710 Fino and yuste (2011) Dense inhibitory connectivity in neocortex. *Neuron.* 69, 1188-1203.

**Feb 25, 2012 (1000-1315hrs)**

**Philip Schnepel**  
1000-1025 Bock et al. (2011) Network anatomy and in vivo physiology of visual cortical neurons. *Nature* 471, 177-182

**Dymphie Suchanek**  
1030-1055 Perin et al. (2011) A synaptic organizing principle for cortical neuronal groups, *PNAS*, 108 (12)

**Fereshteh Lagzi**  
1100-1125 Arenas et al (2008) Synchronization in complex networks. *Physics Reports*, 469:93-153

**Coffee Break**

**Taskin Deniz**  
1145-1210 Pernice et al (2011) How Structure Determines Correlations in Neuronal Networks. *PLoS Comput Biol* 7(5) : e1002059

**Caroline Arand**  
1215-1240 Liu et al (2011) Controllability of complex networks. *Nature* 473, 167-173

**Yam Song Chua**  
1245-1310 The Non-Random Brain: Efficiency, Economy, and Complex Dynamics. *Front Comput Neurosci*; 5: 5.