Master Course – Aug 2012

Analysis of Neural Data, Modeling of Neurons and Networks

Modul “Analyse und Theorie Neuronaler Prozesse A” (23902a) 6 CR

Prof. Martin Nawrot / Dr. Michael Schmuker, Freie Universität Berlin and Bernstein Center for Computational Neuroscience Berlin

Dates:	***2 weeks full time, August 6 - 17***
Location:	*New Computer Room, Bernstein Center, Campus Charite*
Initial Meeting:	***19.04., 16:00** FU: Seminar Room II, Königin-Luise Str. 1-3*
Requirement:	*Good programming skills; Introduction to Python will be provided*

*This interdisciplinary **compact course** introduces the student to the modeling of biologically realistic single neurons and small networks of spiking neurons. Basic intra- and extracellular data analysis methods are introduced in order to analyze and study neuron and network model behavior.*

*The course outline combines a **theoretical introduction** in form of a morning lecture with **practical simulation experience** using Python as programming language and pyNN as Python-based simulation environment. During the final 3- days the students will work in small teams on a **simulation project**. An additional introduction to Python (1 day) is offered. Students need to prepare intensively for the course on the basis of a reading list.*

*This course specifically addresses **Master students** in the following programs but is generally open to interested students from other programs. The number of participants is restricted to a max. of 16 students.*

- ***Bioinformatics (FU)***
- ***Neurobiology and Behavior (FU)***
- ***Computational Neuroscience (TU/HU)***

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