

➤ **Monday November 5th, 9:30 a.m. – 12:30 p.m.**

Interactive Neuronal Network Modeling with NEST 2

Markus Diesmann

RIKEN Brain Science Institute, Wako-shi, Saitama, Japan
Bernstein Center for Computational Neuroscience, Albert-Ludwigs-University,
Freiburg, Germany

Marc-Oliver Gewaltig

Honda Research Institute Europe, Offenbach, Germany
Bernstein Center for Computational Neuroscience, Albert-Ludwigs-University,
Freiburg, Germany

Abigail Morrison

RIKEN Brain Science Institute, Wako-shi, Saitama, Japan

Hans Ekkehard Plesser

Norwegian University of Life Sciences, Aas, Norway

Abstract:

NEST is a simulation environment for large heterogeneous networks of point-neuron models or neuron models with a small number of compartments. It supports spike based as well as continuous (e.g. rate, currents) interaction between the nodes of the network.

We present a preview of NEST 2 with pyNEST, a new Python-based [1] user interface, which makes it easier to learn and use NEST. Together with analysis packages like Scientific Python (www.scipy.org), users can now simulate networks and analyze results in a single interactive Python session.

NEST 2 has already been used with great success and appreciation at two European summer schools in 2007.

Other new features of NEST 2 include support for synaptic plasticity, a wider range of model neurons, and parallel simulation on multi-processor (core) computers as well as computer clusters.

At the INCF stand, we will demonstrate the new capabilities of NEST and invite visitors to try it interactively. For more information, please see the Scholarpedia article on NEST at <http://www.scholarpedia.org/article/NEST>.

[1] Python (www.python.org) is a powerful programming language that is easy to learn and has excellent support for scientific computing.