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Book of Abstracts

Contents

Using the simulation engine NEST in neuroVIISAS	1
Community Codes	1
Welcome	1

Posters & Coffee / 1**Using the simulation engine NEST in neuroVIISAS****Author(s):** Prof. SCHMITT, Oliver¹**Co-author(s):** Dr. EIPERT, Peter² ; Mr. SCHWANKE, Sebastian² ; Mr. CHRISTIAN, Nitzsche²¹ *Universtiy of Rostock, Department of Anatomy*² *University of Rostock***Corresponding Author(s):** schmitt@med.uni-rostock.de

neuroVIISAS is a generic framework for integrating connectomes, spatial reconstructions and ontologies to analyze structural and functional connectomes. So far, a susceptible-excited-refractory (SER) and a reaction diffusion (RD) model was implemented to compare SER und RD functional connectomes with population based approaches. The later are generated with **NEST**. A weighted and directed structural connectome of the rat cerebral cortex was used to define multiple leaky-integrate-and-fire neuron populations. The population size was related to the volume of the cortical areas. The connectivity within a population was randomized. For the interconnections between populations the structural connectome data was applied. The simulations were analyzed by pairwise coincidences of the activity dynamics. Finally, a new differential comparison of acitivity patterns is performed.

Posters & Coffee / 3**Community Codes**TERHORST, Dennis¹¹ *INM-6***Corresponding Author(s):** d.terhorst@fz-juelich.de

In modern research the use and development of new software tools is an integral part. Generating new tools over and over again is however a useless waste of resources and without the continued use of established tools many other problems arise. Short-lived code bases are not only problematic in the light of reproducibility and comparability, but the lack of review mechanisms also reduces the code quality and with that the maintainability. Building upon tools that cannot be debugged could in the end lead to questionable scientific results.

Continued and wide-spread use of a software can only be achieved by including the research community into the development process. Community driven development helps to adapt the software to new research requirements, and dedicated maintenance and quality control stabilize the code base to support a long-term sustainable development process.

This contribution highlights the key aspects of “community codes” and presents the main tools and mechanisms used in the NEST community. A look on other projects like the Electro-physiology Analysis Toolkit (Elephant) and the FLEUR code shows similarities and differences.

Welcome / 21**Welcome****Corresponding Author(s):** hans.ekkehard.plessner@nmbu.no