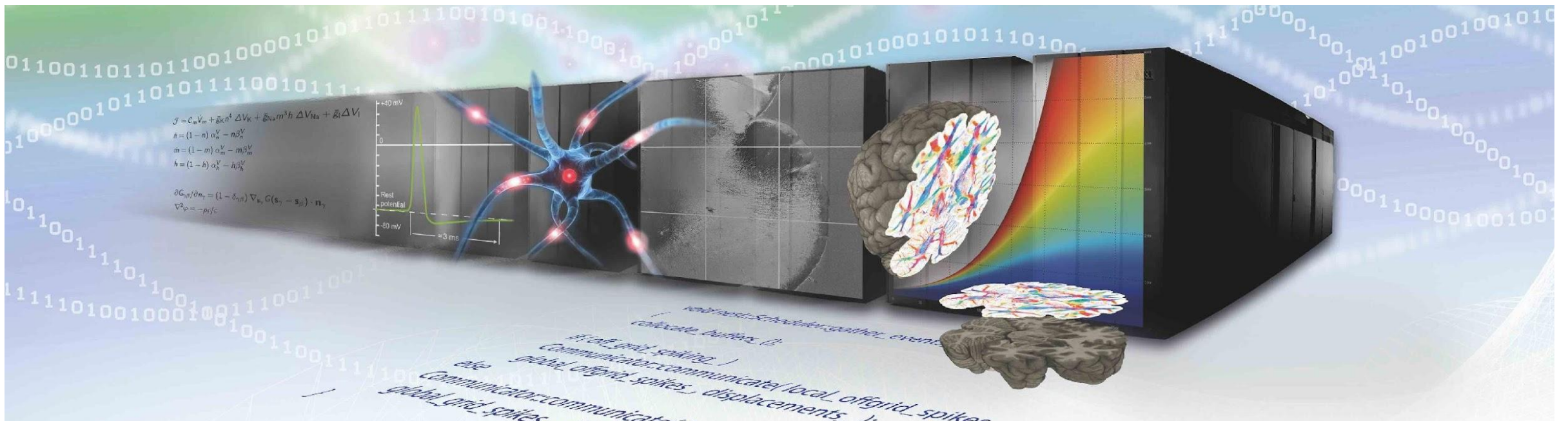




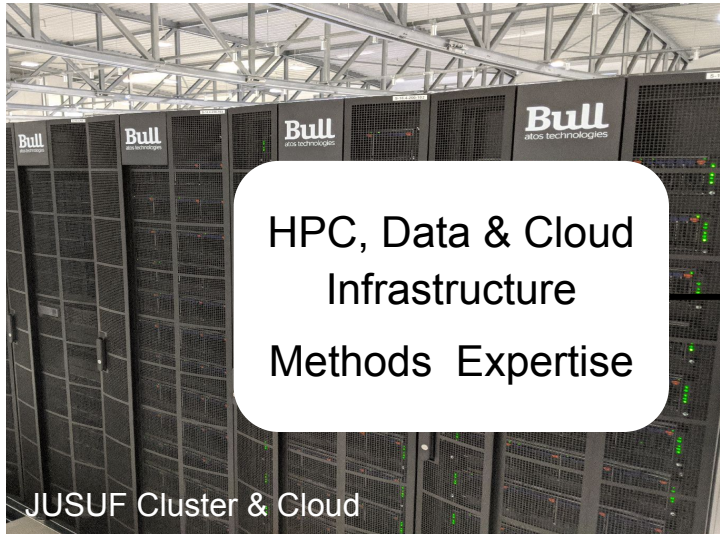
BOOSTING NEUROSCIENCE RESEARCH WITH HPC

OCTOBER 23RD, 2023 | DR. SANDRA DIAZ PIER, SDL NEUROSCIENCE, JSC, FZJ

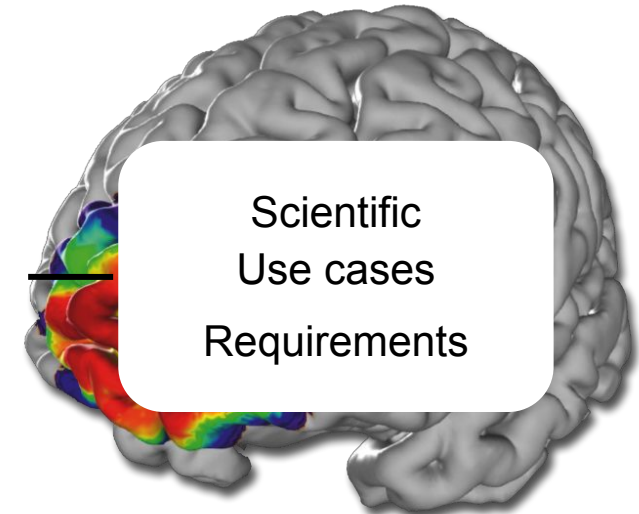
SIMULATION & DATA LAB NEUROSCIENCE

Collaborative research and support

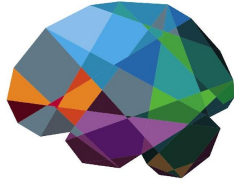
SDL Neuroscience @JSC



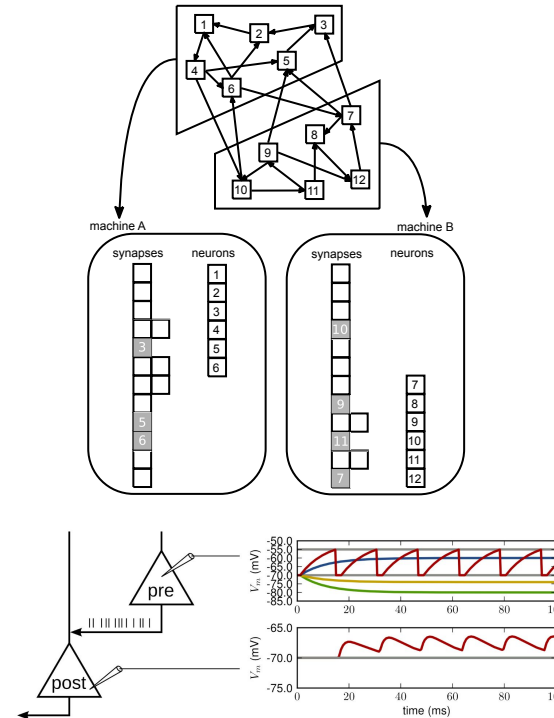
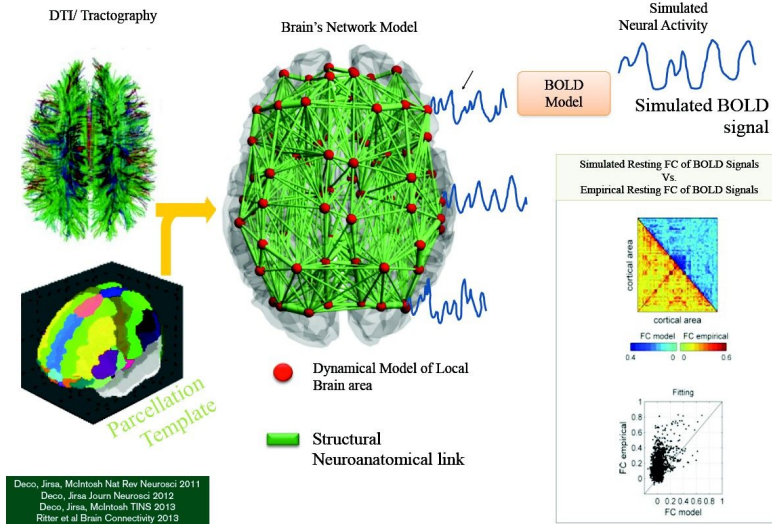
Neuroscience community



DESIGN & IMPLEMENTATION OF EFFICIENT SIMULATION METHODS FOR MODELS AT DIFFERENT SCALES

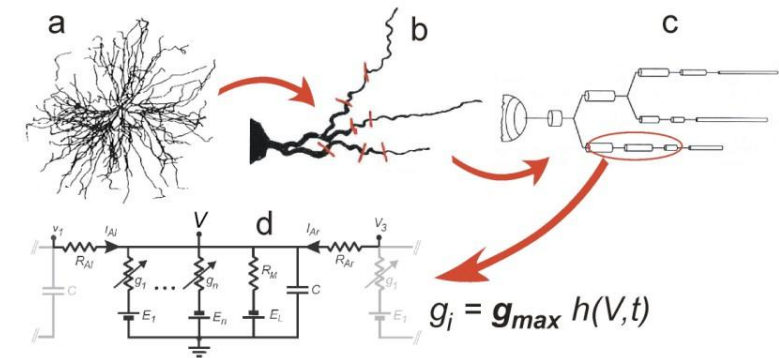


THEVIRTUALBRAIN.



nest ::

arbor



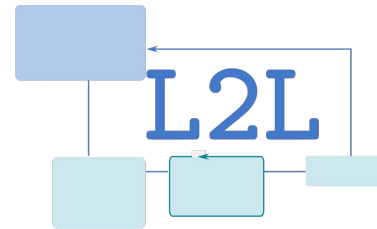
Human Brain Project



JÜLICH
Forschungszentrum

USE CASES

- Jupyter notebook showing optimization of simulations of the whole brain with The Virtual Brain using the machine learning tool L2L via a connection to HPC infrastructure at the JSC with Unicores



- Using the container infrastructure to launch NEST Desktop and do some simulations of neural networks in NEST

EBRAIN-HEALTH & EBRAINS 2.0

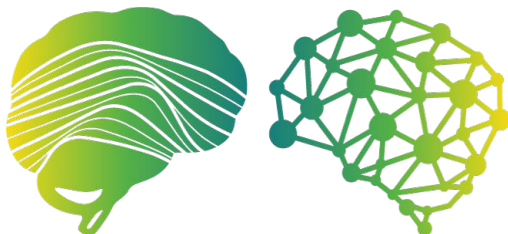


Co-funded by
the European Union

“The project eBRAIN-Health delivers a distributed research platform for modeling and simulating complex neurobiological phenomena of human brain function and dysfunction in a data protection compliant environment.”

(<https://ebrain-health.eu/home.html>)

The SDL Neuroscience contributes with software development as well as to the deployment of tools and services on HPC resources.



EBRAINS (European Brain Research Infrastructures) is developed as a legacy of the Human Brain Project. The EBRAINS 2.0 project will further the development and provision of the infrastructure's research technologies to the scientific community.

(<https://www.ebrains.eu/projects/ebrains-2-0>)

The SDL Neuroscience contributes to HPC and cloud infrastructure operations, software deployment, architecture definition, scientific liaison, tool development and coordination.



EBRAINS

SIMULATION & DATA LAB NEUROSCIENCE

Contact



Dr. Thorsten Hater



Dr. Han Lu



Michiel van der Vlag

Special thanks to my colleagues Thorsten Hater, Han Lu and Michiel van der Vlag for helping in the preparation of the use cases



www.fz-juelich.de/ias/jsc/sdlns



slns@fz-juelich.de