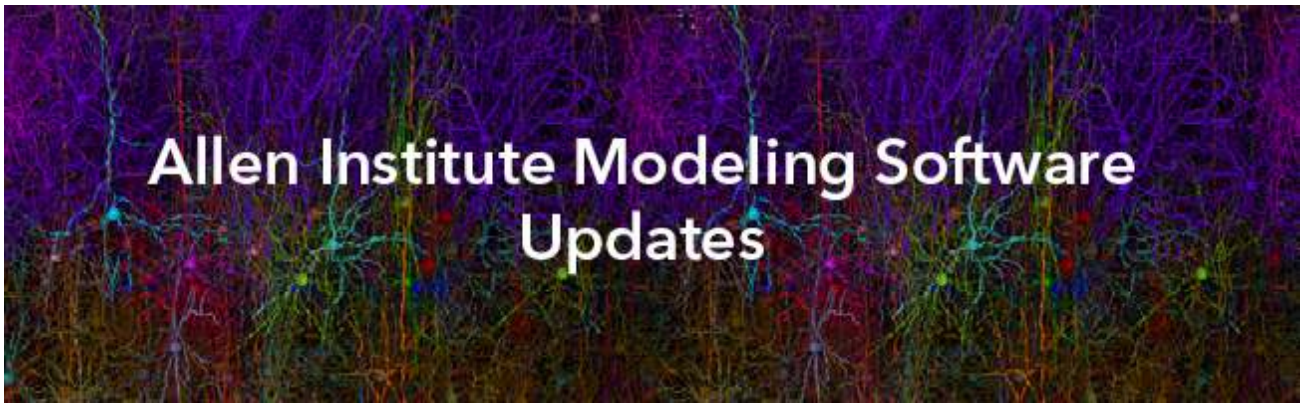


Find us at SfN 2023 in Washington, DC!

Come chat with us about modeling at posters, the Tools, Tech, and Theory Social, and Allen Institute **booth #901**.

Learn more

We are hiring!

A Scientist position is open at the Allen Institute in the area of biologically realistic modeling. The Scientist will participate in our efforts to develop bio-realistic simulations at multiple levels - from neurons, to brain areas, to whole brains.

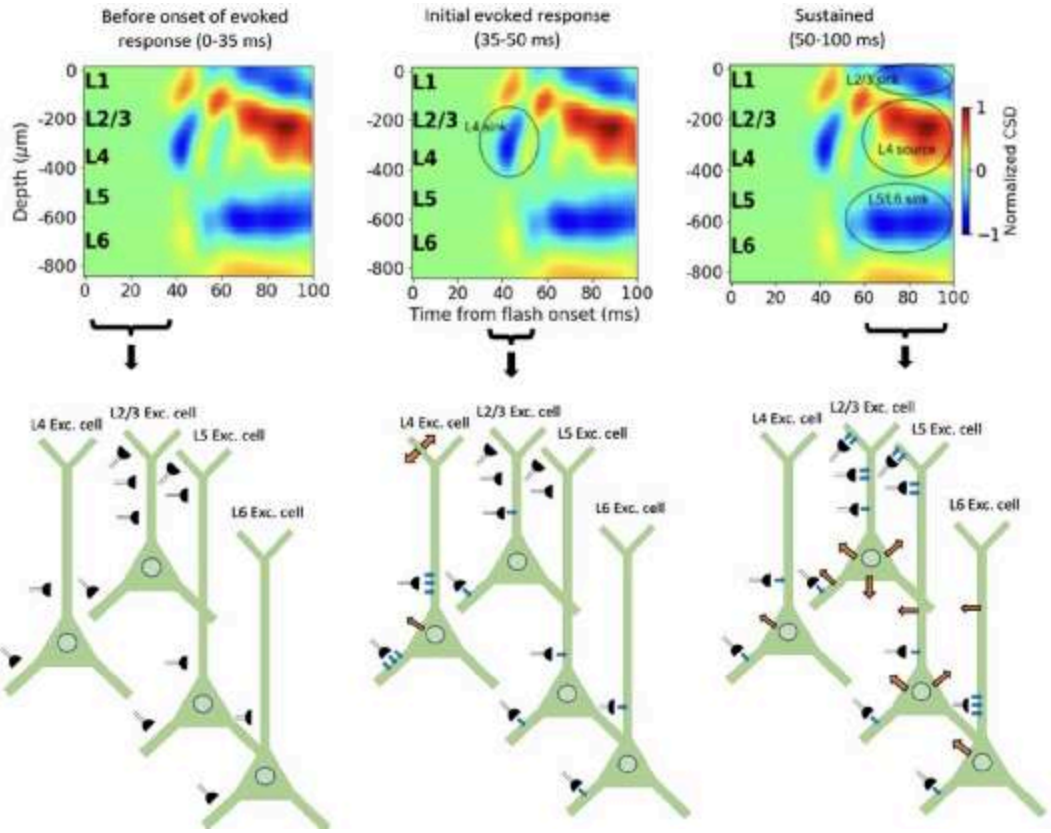
Appl here

Modeling Software Workshop: July 15-17, 2024

At this in-person workshop, attendees will learn how to use software for building, simulating, and visualizing bio-realistic models of brain circuits.

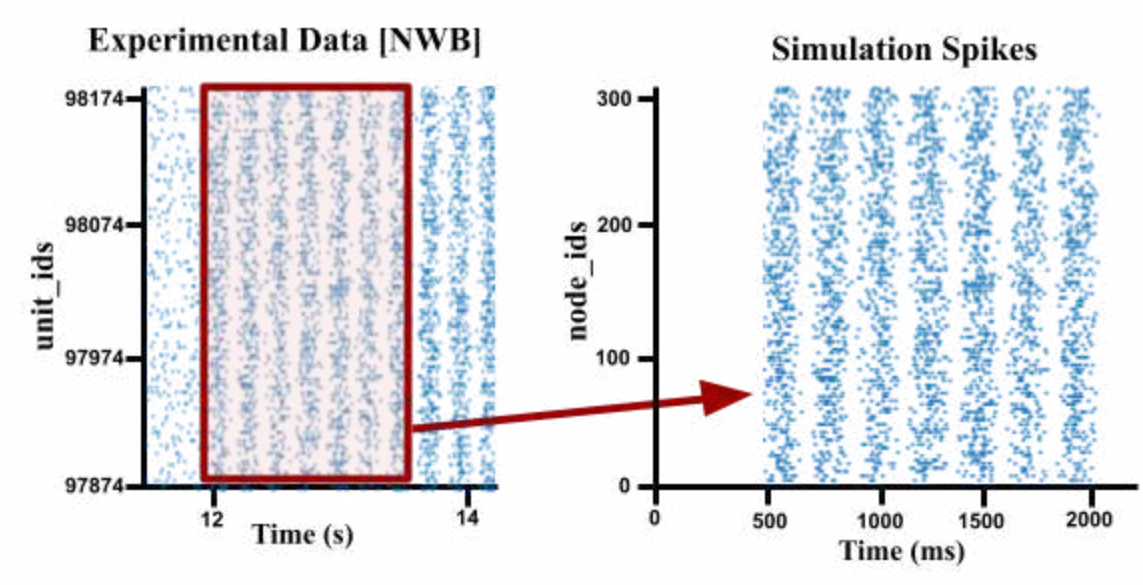
Appl b March 15

New paper published in eLife



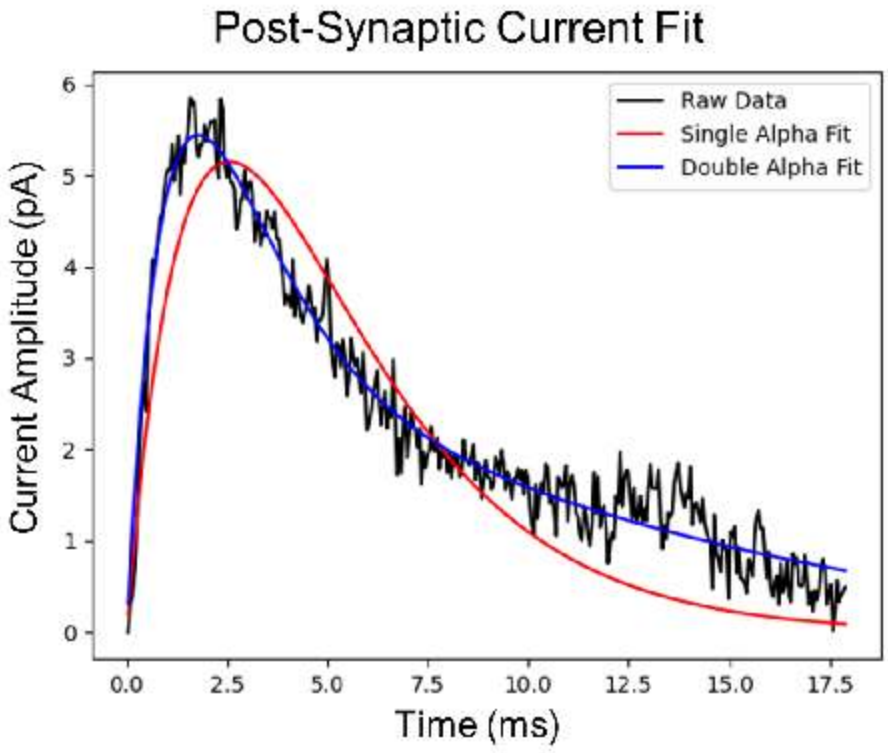
In a new paper published in collaboration with Atle Rimehaug and Gaute Einevoll at the University of Oslo and Norwegian University of Life Sciences, the Allen Institute's model of mouse V1 was used to simulate the cortical Local Field Potential (LFP). The simulations elucidate circuit mechanisms of current sinks and sources that sculpt the LFP, underscoring the role of cortical feedback in generating this signal.

BMTK includes the ability to read and write to Neurodata Without Borders (NWB) 2.0 format



Modelers can now effortlessly import in-vivo electrophysiology recordings, such as the many Neuropixels experiments done at the Allen Institute and other institutions, into their simulations.

Simulations with double alpha function synapses are now enabled



Using the sum of two alpha functions (rather than one) allows for more accurate modeling of the multiple time scales present in

postsynaptic currents. Simply specify the 'glif_psc_double_alpha' model in BMTK's PointNet.

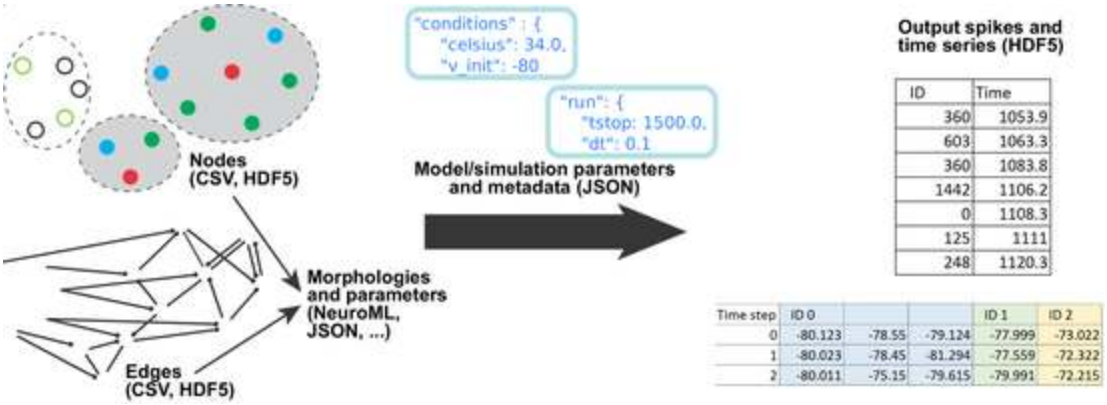
Enhance your simulation efficiency with BMTK's new capability of OpenMP parallelization for PointNet simulations

Leverage all CPU cores without the necessity of building NEST from source to enable MPI. Simply add the 'n_thread' argument when you instantiate 'PointSimulator'.

BMTK now supports HDF5 file compression

The default gzip compression now halves the size of typical spike HDF5 files without incurring significant CPU overhead. HDF5 compression is also available for builder outputs.

SONATA is now natively supported in NEST



NEST now supports building and simulating networks of point neurons described by the SONATA format. This development was

spearheaded by Nicolai Haug and colleagues in the group of Hans Ekkehard Plesser at the Norwegian University of Life Sciences, in collaboration with the Allen Institute team.

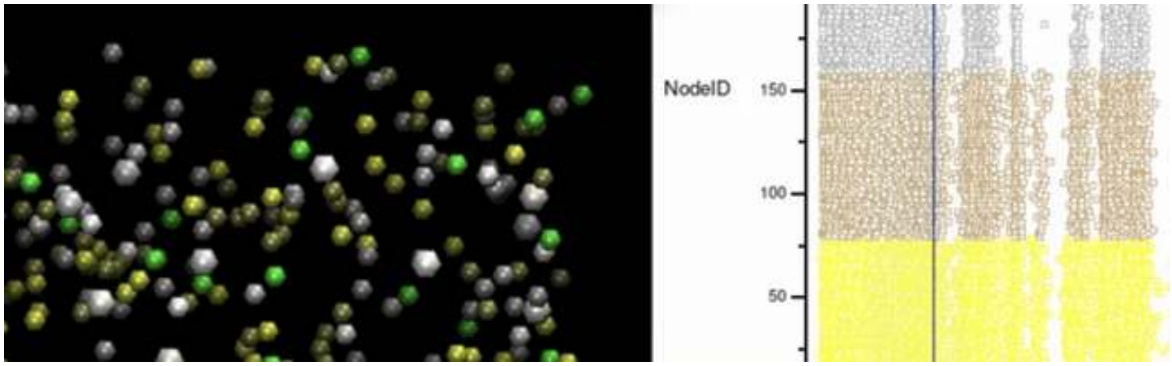
VND now available for Macs

VND is available for M1/M2/M3 (Apple Silicon) and Intel machines, and can run on macOS 11, 12, 13.3+, and the latest macOS 14.

Explore model-specific attributes of your neuronal system with new attribute browsing and searching features

The attribute browser assists in creating new visualization selections using a text-based search-selection language with wildcards.

An interactive spike raster plot



This feature provides a clickable neuron-ID – time 2D graph coupled to an animated 3D view of the simulated neuronal system.

Please contact education@alleninstitute.org with any questions.

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