1 Specifying OMP parameters in ompsimulator.py

Execute ompsimulator.py code as a script, passing the values as "param-name=paramvalues" pairs, e.g.,

```
python3 ompsimulator.py 0 dpname=omp1 lamm=0.1 lama=0.01 \
lamh=0.00001 nax=10 nol=2 taug=30 fixedel=nrn_5 taus=200 \
jitter=1 spksig=sync nreps=2 nepochs=100 Tesec=10 name=myrun1
```

The translation table between the variable names in the manuscript and in the code is provided below, in Table 1. The fixed delays are specified via string "fdtype"_"value". In the paper we use mainl normalized random normal values specified with σ_D, which is passed as nrn_"σ_D", e.g., nrn_10. For the spiking signal, use spksig="signal spec", we use mainly 4 types shown in Figure 2, and an arbitrary mixture of those. For each pure signal we have a single letter abbreviation, as well as a longer name (sometimes two, to preserve back-compatibility). The specification is as follows:

{"sync", s}: correlated/time-locked poisson spiking
{"indep", i}: independent poisson spiking
{"regsync", r}: correlated/time-locked regular spiking
{"regindep", j}: independent regular spiking
{"msync_xyz"}: Mixed signals, specified with a character sequence xyz.

Mixed signals can be specified in other ways, but for the purpose of this manuscript the simple notation `msync_xxyz...` suffices, in which axons are evenly divided among an arbitrary number of concatenated characters specifying one of the four pure signals using their one-letter abbreviations (s,i,r,j), e.g., `msync_ssssi`, which was used in Figure 4C.

The synchronization profiles are saved in the results/"runname"-results.npy. When using saver=5 only the basic information in a results dictionary (use np.load("file").tolist() to load the results as a dictionary). The key 'tstdarr' containes the synchronization measure, σ_τ, saved as a numpy array with shape (nreps, nepochs, nol, ngroups), where ngroups indicates the number of different mixed signals. Instructions on using saver to generate model high temporal resolution histories of the OMP variables will be provided later (yielding enormous files), and will change in the new ompmodel.py distribution, which will use OMPmodel class.

Description	Symbol	python variable
number of axons	N_A	nax
number of OL	N_O	nol
OL time constant	τ_G	taug
mean interspike interval	τ_s	taus
M-factor production rate	λ_M	lamm
myelin addition rate	λ_A	lama
homeostatic rate	λ_H	lamh
maximal delay	$\tau_{\max}$	taumax
minimal delay	$\tau_{\min}$	taumin
nominal delay	τ_{nom}	taunom
Signal & Simulation Parameters		
Duration of epoch	T_e	Tesec
Number of replicates	n_r	nreps
Number of epochs	n_e	nepochs

Table 1: Table of python variable names. The signal types are specified with a spksig string, as described in the text, and the fixed delays are specified using nrn_σ_D nomenclature.