Data

Source file: traces.xlsx

Data for all non-normalized neural time series extracted from CaImAn. There are four sheets, and their labels indicate the level of hypoxia experienced by the animal. Each column in a sheet has the time series for a single neuron. The first row has information on that neuron; for instance, cell A1 of sheet ‘50’ says ‘Normo\_25\_40\_fish1\_Neuron1\_withZeros’, which indicates that this is neuron1 from fish1 (the neuron and fish IDs were arbitrarily assigned) which experienced normoxia. Cell AK1 says ‘Hypo2\_25\_40\_fish1\_Neuron1\_withZeros’, which indicates that this is neuron1 from fish1 (not necessarily the same neuron from the normoxia session, although this is the same fish) which experienced hypoxia. In short, each level of hypoxia had its own controls, so the same fish will appear twice in each sheet. However, the identity of neurons were not matched across sessions.

Source file: ganglia2\_traces.xlsx

Same organization as traces.xlsx, but only considering neurons in the 2nd vagal sensory ganglion.

Source file: ganglia3\_traces.xlsx

Same organization as traces.xlsx, but only considering neurons in the 3rd vagal sensory ganglion.

Code

File: plot\_fig3b.m

Plots Figure 3B

File: plot\_fig3c.m

Plot Figure 3C, using fish\_analysis.m

File: plot\_fig3d\_e\_suppfig2.m

Plots Figures 3D,E, and Supplementary Figure 2, using snacks\_fish\_plotcorrelationline.m and fish\_ganglia\_analysis.m

File: fish\_analysis.m

Finds the periodogram for neural time series, and removes 1) neurons with fewer than 2 peaks and 2) fish with fewer than 2 recorded neurons

File: fish\_ganglia\_analysis.m

Same as fish\_analysis.m, but also computes low frequency power, as well as the area under the curve of and interpeak intervals for peaks of calcium transients. Also removes 1) neurons with fewer than 2 peaks and 2) fish whose ganglia had fewer than 2 recorded neurons

File: snacks\_fish\_plotcorrelationline.m

Plots responses (e.g., low-frequency power) against level of hypoxia, and calculates the linear regression (using method of least squares).