



Supplemental Figure 1

Example activity of a neuron during standing

The fluctuation of the discharge of individual neurons during standing was estimated. The firing activity of the neurons while the cat was standing in front of the feeding dish after each passage around the chamber was analyzed as if the cat was walking. The timing of steps made by the same cat was used to construct rasters of spiking activity and corresponding histograms. The activity of a pyramidal tract neuron (PTN #42) during 3 sets of selected time intervals is shown. This is the same PTN, the activity of which during locomotion is shown in Figure 3.

A, C, E: Rasters of the distribution of spikes within selected time intervals. Three sets of 38-40 intervals are shown.

B, D, F: Corresponding histograms of the distribution of the firing rate across selected time intervals. The horizontal interrupted line shows the firing rate of the neuron during standing averaged across all available data. The values of the depth of the activity modulation (dM) and the coefficient of modulation (M) are indicated.

The analysis was done for 100 neurons (55 from cat 1 and 45 from cat 2), for which records were long enough to obtain at least 1-2 sets of 20-40 time intervals (41.2 ± 9.8 , mean \pm SD) equal in duration to the average stride of this cat. It showed that during standing, the value of the dM exceeded 5.2% for only five neurons, and the value of M exceeded 65% for only 5 neurons. Therefore, when the dM of the activity of a neuron was greater than 5.2% or the M was greater than 65% during locomotion, we assumed, with 95% confidence, that it was due to the stride-related modulation.