Supplemental Information

Neuronal Correlates of Tactile Working Memory

in Prefrontal and Vibrissal Somatosensory Cortex

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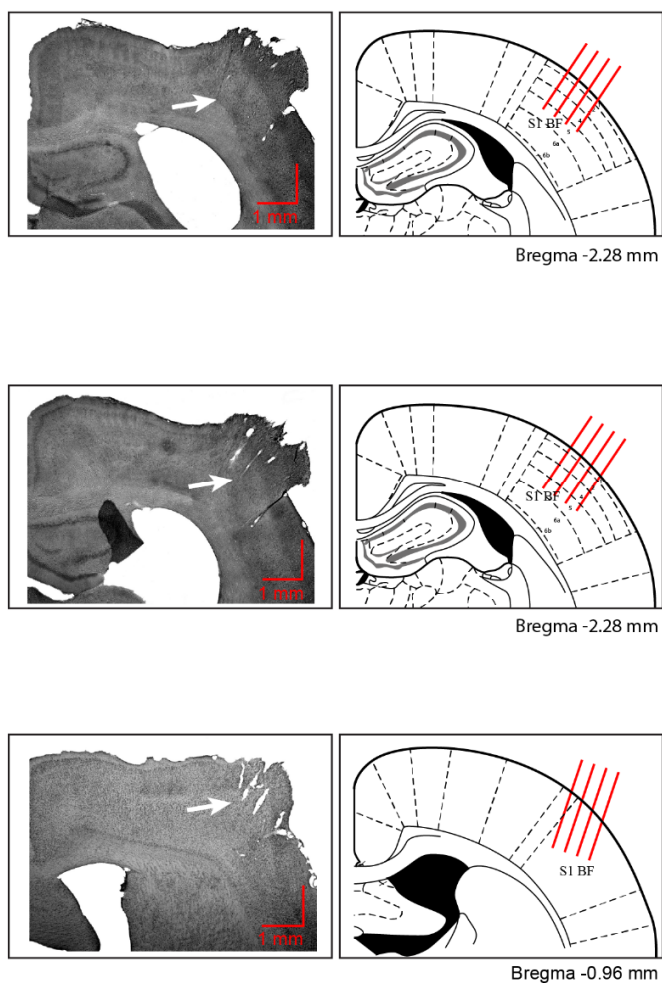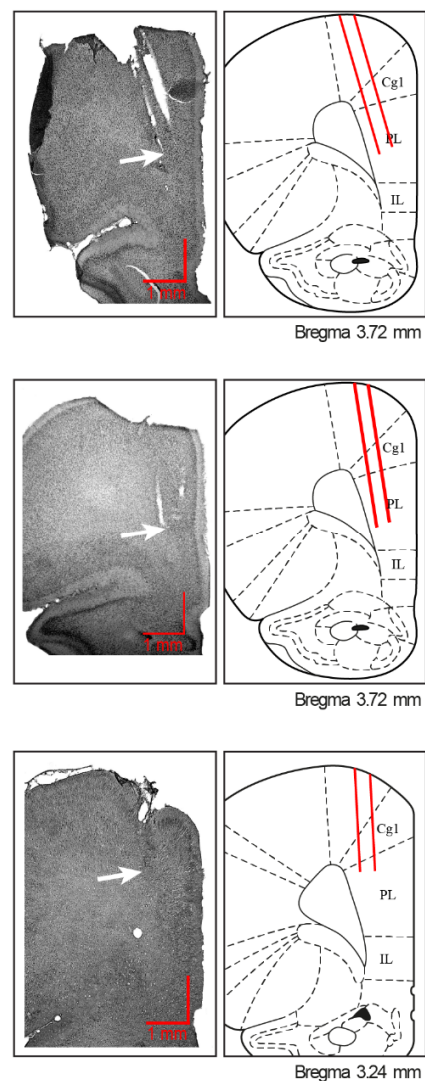
Figure S1. Anatomical location of recording sites in vS1 and PL. Related to Figure 1.

(A) Left: 3 Example coronal sections showing electrode tracks in vS1 after the conclusion of the experiments. **Right:** their corresponding location projected on the Paxinos and Watson rat brain atlas (Paxinos and Watson, 2007).

(B) Left: Example histological coronal sections from PL. **Right:** their locations projected on the rat brain atlas.
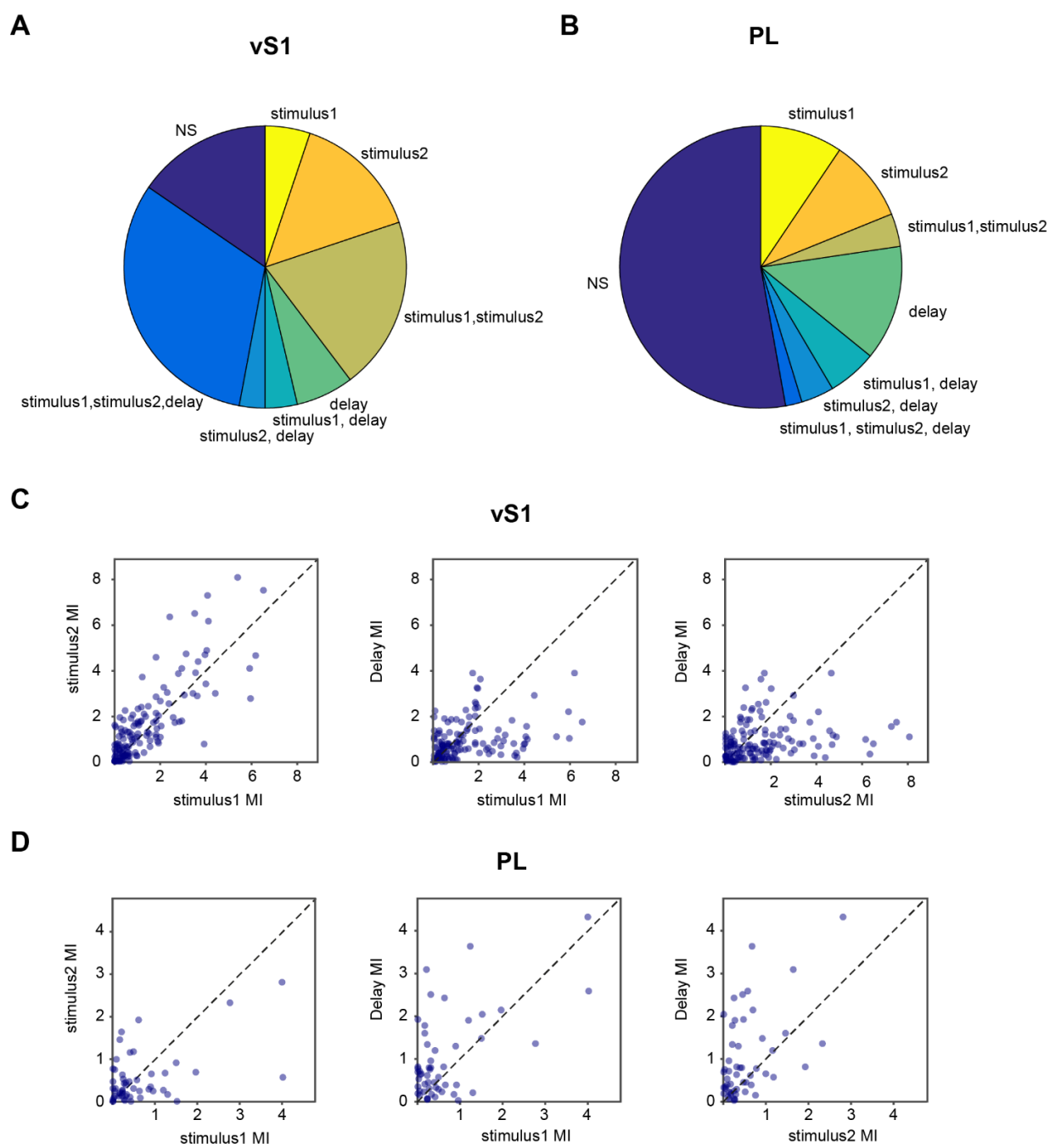
Figure S2. Proportion of vS1 and PL units encoding stimulus at different epochs and scatter plot of conditional mutual information. Related to Figure 2 and Figure 3.

(A, B) Pie charts showing the percentage of units with significant cumulative information about stimulus in either stimulus1, stimulus2, interstimulus delay period or non-significant (NS) in vS1 (A) and PL (B).

(C, D) Scatter plots comparing cumulative mutual information among different trial epochs: stimulus1, stimulus2 and poststimulus delay period for vS1 (C) and PL (D) units. For the delay period maximum information across early, mid and late delay has been included.
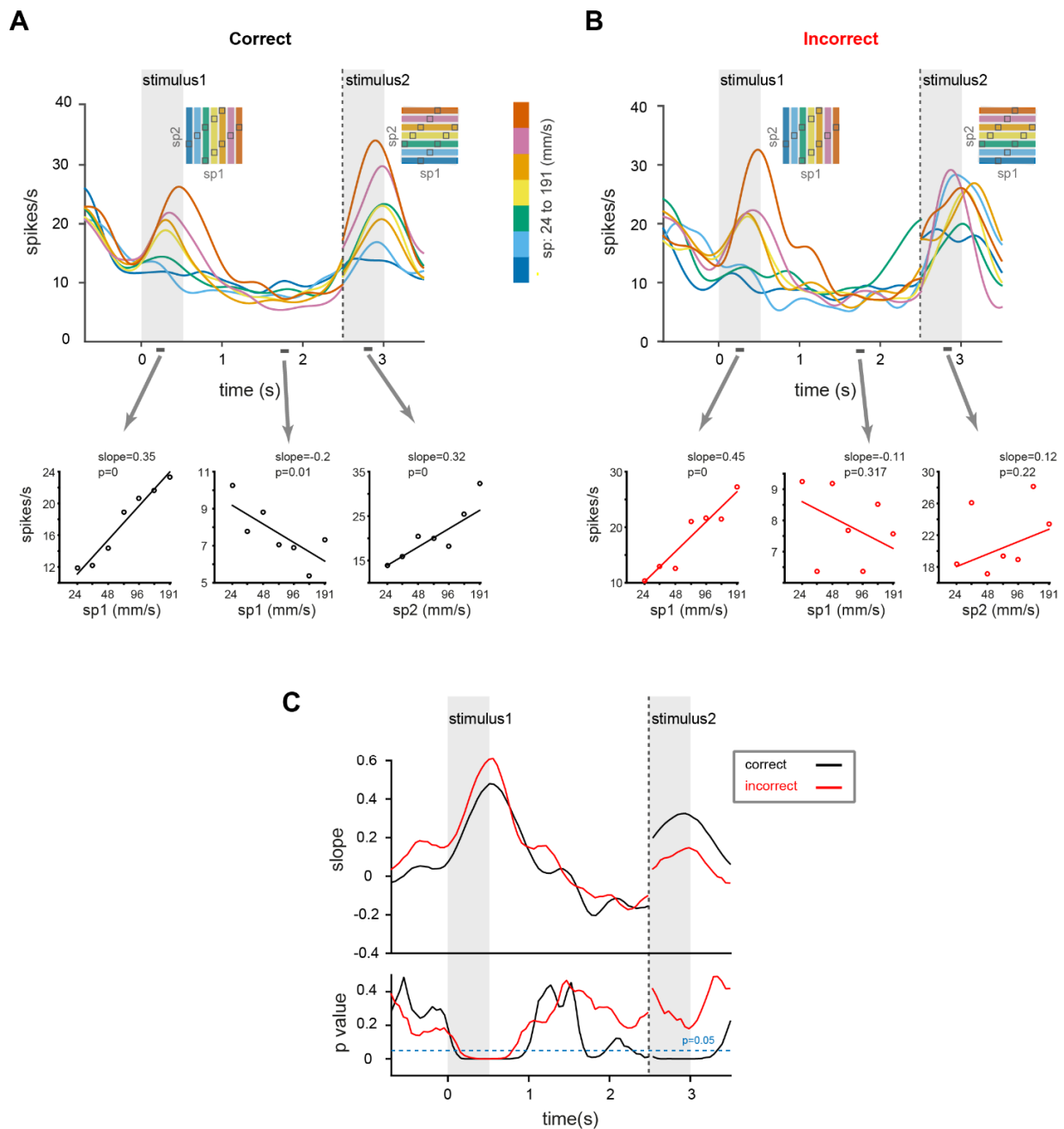
Figure S3. Parametric encoding of stimulus speed and GLM fitting in correct versus incorrect trials. Related to Figure 4.

 (A) top: PSTH of a vS1 unit in correct trials. Mean firing rate of the neuron for each stimulus condition is plotted across time. Color code represents stimulus1 speed from the beginning until the end of delay, after which it represents stimulus2. The insets highlights this grouping on the SGM. **bottom:** GLM linear fit at 3 different time windows quantifying

linear correlation between firing rate and stimulus speed. Circles show the mean firing rate in a 50 ms bin as a function of stimulus1 (left and middle) or stimulus2 (right). Fitting has been performed using a GLM model with a logarithmic link function.

(B) Similar to (A) but for incorrect trials.

(C) Top: Slope of the fit as a function of time during behavioral epochs for the same unit using a sliding window of 50 ms for correct (black) and incorrect (red) trials. **Bottom:** p value of the permutation test for both conditions. Statistical test of significant at each bin was tested by bootstrapping the trials and comparing the distribution of bootstrapped slopes to the shuffle distribution attained after randomly permuting the trial tags.