**Banterle All mice:**

acquisition/ElectricalSeries\_Vm

comments: sampling rate 20 000 Hz, in V.

description: patch-clamp membrane potential recorded from one neuron with a glass electrode of 4-7 MOhms (DC current-clamp recording, bevel filter 10 000 Hz)

acquisition/ElectricalSeries\_CM

comments: sampling rate 20 000 Hz, in A.

description: Current Monitor (CM) = current injected through the recording pipette

Experiment description:

If Data\_Full.Session\_Type = ‘Trained’ or ‘D1’

{'behavior type': 'Whisker rewarded (WR+)','session\_type': 'ephys\_session', 'Ambient noise': '80 dB', 'wh\_reward': 1, 'reward\_proba': 1, ‘wh\_stim\_amps’: ‘Data\_Full.Sweep\_Stim\_Amp’, 'licence': 'VD-1628.6'}

If Data\_Full.Session\_Type = ‘Naive’

{'behavior type': ‘No Task ','session\_type': 'ephys\_session', 'Ambient noise': '80 dB', 'wh\_reward': 0, 'reward\_proba': 0, ‘wh\_stim\_amps’: ‘Data\_Full.Sweep\_Stim\_Amp’, 'licence': 'VD-1628.6'}

Session description:

If Data\_Full.Session\_Type = ‘D1’ or ‘Trained’

ephys Whisker Rewarded (WR+) mouse: the mouse was rewarded with a drop of water if it licked within 1 s following a whisker stimulus (go trials) but not in the absence of the stimulus (no-go trials). Membrane potential recording was performed in the medial prefrontal cortex using patch-clamp whole-cell recording with glass pipette (4-7 MOhms). WDT session = mPFC\_Vm\_Mice.xlsx/ Session Number

If Data\_Full.Session\_Type = ‘Naive’

ephys No Task mouse: the mouse was habituated to sit still while head-restrained. Membrane potential recording was performed in the medial prefrontal cortex using patch-clamp whole-cell recording with glass pipette (4-7 MOhms) while single-whisker stimuli were delivered at random times.

Notes:

Single-neuron membrane potential recording in the medial prefrontal cortex of awake behaving mice

/general/devices/Amplifier Vm:

description: Differential extracellular amplifier for membrane potential recording – Multiclamp 700B (Molecular Devices).

/general/devices/Digitizer:

description: Wavesurfer (https://wavesurfer.janelia.org/) + National Instrument cards (https://www.ni.com).

/general/devices/Patch-clamp Microelectrodes

description: Whole-cell pipettes had resistances of 4-7 MΩ and were filled with a solution containing (in mM): 135 potassium gluconate, 4 KCl, 10 HEPES, 10 phosphocreatine, 4 MgATP, 0.3 Na3GTP (adjusted to pH 7.3 with KOH), and 2mg/ml biocytin.

/general/subject => see mPFC\_Vm\_Mice.xlsx

Behavioral task

Session Number

Session Type

/processing/behavior/BehavioralEvents

ResponseType

comments: trial responses: 0 = MISS, 1 = HIT, 2 = CR (Correct Rejection), 3 = FA (False Alarm), 4 = Unlabeled (no assigned response).

description: Response type for each trial

StimFlags

comments: Whisker stimulation amplitudes are encoded as integers: 0 = no stimulus (Catch trial), 1 = deflection of the C2 whisker.

description: Timestamps marking the amplitude of whisker stimulation for each trial

TrialOnsets

comments: time start of each trial

description: Timestamps marking the onset of each trial.

whisker\_hit\_trial

comments: time of each whisker\_hit\_trial event.

description: Timestamps for whisker\_hit\_trial

whisker\_miss\_trial

comments: time of each whisker\_miss\_trial event.

description: Timestamps for whisker\_miss\_trial

correct\_rejection\_trial

comments: time of each correct\_rejection\_trial event.

description: Timestamps for correct\_rejection\_trial

false\_alarm\_trial

comments: time of each false\_alarm\_trial event.

description: Timestamps for false\_alarm\_trial

/processing/behavior/BehavioralTimeSeries

PiezoLickSignal (= Sweep\_Lick)

comments: PiezoLickSignal is the continuous electrical signal recorded from the piezo film attached to the water spout to detect when the mouse contacts the water spout with its tongue.

description: Lick signal over time (V, Sampling rate = 2000 Hz)

WhiskerAngle

comments: the whisker angle is extracted from video filming and is defined as the angle between the whisker shaft and the midline of the head.

description: Whisker angle traces aligned to video\_onsets.

/units

Target\_area= ‘mPFC’

Type of neuron =’NaN’

Cell\_id= Data\_Full.Cell\_ID

Cell\_depth= Data\_Full.Cell\_Depth (um)