Modifications to Script and Helpers Sept 6, 2022

**Cell 7**; **Line 439**: modified TSapplystat command to compute latency to max ispki when trial type set to CS and return result in a field 'LatToMxOnset’. Set Subject to ‘all’ and trial type to CS and then executed the modified command, which is

TSapplystat('MxISIandLat','SpkTms',@maxAndLat)

% Added Sept 7, 2022 in response to reviewer request to compute latency to

% longest interspike interval

%{

function MandL = maxAndLat(spktms)

% 2 element col vector; 1st element = dur of max ispk; 2nd element = its

% latency. Latency is taken to be 0 if longest ispki was interval from CS

% onset to 1st spike

if isempty(spktms) % no spikes during CS

MandL = [nan nan];

return

else

spktms = [0;spktms];

end

ispki = diff([0;spktms]); % NB this is different comp from comp that yields

% 'MaxIspkI'. I is introduced in response to reviewer's request to

% compute latencies to max interspike interval. The 'MaxIspkI' field

% contains the maximum of those intervals that occur between spikes that

% actually occur within the CS interval. That comp does not include the

% interval from CS onset to the 1st such spike. This comp includes that

% interval, because in those cases where the pause was computed to have

% begun before CS onset, the longest interspike interval often also began

% before CS onset. In comparing latencies to pause onset to latencies to

% longest interspike interval, both latencies will be measured from CS

% onset, because it is analytically impossible for them to be shorter than

% this. In computing all other pause statistics, this analytic

% impossibility was ignored in favor of sticking with measures that were

% purely data based. NB Ignoring the analytic impossibility worked against

% the hypothesis that the pause consisted only of a single long interspike

% interval for the following reason: CS onsets almost always occurred

% during interspike intervals. Because of the highly irregular

% (supra-random) interspike interval duration, the latency for the cell to

% respond to the CS onset could easily fall before the time at which the

% spontaneously generated IspkI would have terminated. In those cases, the

% onset of the cell's response is invisible to the electrophysiologist. In

% those cases, the purely data based pause onsets were negative, that is,

% they occurred before CS onset, which is analytically impossible. In those

% cases, however, the maximum interspike interval was always computed only

% from spikes falling within the CS. One sees from simply inspection, that

% when pause onsets were negative, the longest interval within the CS

% before the occurrence of the 1st spike was the first one, the one that

% was not considered in the computation of 'MaxIspkI'

[mx, imx] = max(ispki); % this max ispki, unlike 'MaxIspkI', may include

% the interval from CS onset to the 1st spike within the CS interval

lat = spktms(imx); % these latencies are 0 if the longest ispki was from CS

% onset to the 1st spike within the CS

MandL = [mx lat];

%}

Then, at **Line 499** of same Cell, added TScombineover('CSmxIspkIandLat','MxISIandLat');

Then

At **Cell 20i, Line 1367**

TSapplystat('PsOnMxIspkIDiff',{'CSmxIspkIandLat' 'PsOn'},@TwoLats)

% creates 3-col field at Session level: duration of longest ispki in col 1,

% latency to that ispki from CS onset in 2nd col and latency to that ispki

% from PsOn in 3rd col

%{

function TL = TwoLats(MxAndLat,PsOn)

lv = isnan(PsOn);

PsOn(lv) = [];

MxAndLat(lv,:) = [];

lv0 = PsOn<0;

PsOn(lv0) = 0;

PsOnToMx = MxAndLat(:,2) - PsOn; % latency of max ispki measured from PsOn,

% which cannot be < 0 but will often be >0

TL = [MxAndLat PsOnToMx]; % 3-col array

%}

Then

At **Cell 20, Line 1411**

TScombineover('PsOnMxIspkIDiff\_S','PsOnMxIspkIDiff','t')

Then (after limiting subjects to those in 150ms group)

**Cell 21, Line 1436**

TScombineover('G150PsOnMxIspkIDiff','PsOnMxIspkIDiff\_S','t')

**Line 1461** (after limiting to 200 ms grp)

TScombineover('G200PsOnMxIspkIDiff','PsOnMxIspkIDiff\_S','t')

**Line 1485** (after…

TScombineover('G20PsOnMxIspkIDiff','PsOnMxIspkIDiff\_S','t')

**Line 1509** (after…

TScombineover('G400PsOnMxIspkIDiff','PsOnMxIspkIDiff\_S','t')

**Line 1533** (after…

TScombineover('G450PsOnMxIspkIDiff','PsOnMxIspkIDiff\_S','t')