

We obtained data from 2 monkeys. On no-go trials, there was some difference after choice stimulus offset between 2 monkeys as mentioned in the paper, that is, monkey A was rewarded for a further saccadic response while monkey B was rewarded for 1000-ms fixation.

Individual unit mat files have event array (event code) and spike array (timing).

1. Event Array

Each column of event array indicates the followings:

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Column1: Trail number
Column2: Condition % 1-8: Cue 1 trials
                  % 9-16: Cue 2 trials
                  % 1-4,9-12: Go trials
                  % 1,9: Single target (T) right
                  % 2,10: Single target (T) left
                  % 3,11: Two stimulus target right
                  % 4,12: Two stimulus target left
                  % 5,13: Single Nogo NI or NC right
                  % 6,14: Single Nogo NI or NC left
                  % 7,15: Two stimulus NI right NC left
                  % 8,16: Two stimulus NI left NC right
                  % 17~ : Saccade task which is not main task
Column3: CUE % Cue1,2 Saccade Task: 0
Column4: SUCCESS % Correct trial: 1, Error trial: 0
Column5: object display(OBJ_control lateral)
          % T1 = 1, T2 = 2, NontargetT1(to C2) = 3,
          NontargetT2(to C1) = 4, Neutral Distractor = 5,
          No stimulus = 0;
Column6: object display (OBJ_ipsilateral);
          % T1 = 1, T2 = 2, NontargetT1(to C2) = 3,
          NontargetT2(to C1) = 4, Neutral Distractor =5,
          No stimulus = 0;
Column7: Go or Nogo;% GoLeft = 1; GoRight = 2; Nogo = 3; SaccadeTask = 0;
Column8: Go or Nogo (regardless of the saccadic side);
          % Go = 1; Nogo = 2;
Column9: ROLE (event phase);
          % Cue: 1, Choice = 2, Go sign =3, NoGo end=3,4
          Reward on =5, Error warning = 6;
Column10:EventNo;
          % 1)1item display(GO): Cue= 1, Choice = 2, Go sign =3,
          Reward on =4, (if error on Error warning = 5);
          % 2)2item display(Go): Cue= 1, Choice = 2, Choice =3,
          Go sign=4, Reward on =5,(if error on Error, warning=6);
          % 3)1item display(NoGo):Cue= 1, Choice = 2, Go sign =3,
          NoGo end=4, Reward on=5,(if error on Error warning=6);
          % 4)2item display(NoGo): Cue= 1, Choice = 2, Choice =3,
          Go sign=4, NoGo end=5,Reward on=6,(if error on Error warning
          = 6);
Column11:ChoiceRole;
          % Cue: 1, Targ = 2, NI =3, NC=4, Go sign (green)=5,
          NoGo end = 6, Reward on=7, Error warning=8;
Column12: End code;
Column13: Error code;
Column14: Saccade latency
Column15: Stimulus duration
Column16: Reward on
Column17: GET GO
Column18: GET NOGO
Column19: GET TARGET
Column20: START
Column21: STOP
Column22: Stimulus ON
Column23: Stimulus off
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ev_codes.TRNUM = TRNUM;
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ev_codes.COND          = COND;
ev_codes.CUE           = CUE;
ev_codes.SUCCESS       = SUCCESS;
ev_codes.OBJ_L         = OBJ_L;
ev_codes.OBJ_R         = OBJ_R;
ev_codes.GONOGO2       = GONOGO2;
ev_codes.GONOGO        = GONOGO;
ev_codes.ROLE          = ROLE;
ev_codes.EventNo       = EventNo;
ev_codes.ChoiceRole    = ChoiceRole;
ev_codes.ENDCD         = ENDCD;
ev_codes.ERRCD         = ERRCD;
ev_codes.SACLAT        = SACLAT;
ev_codes.STIMDUR       = STIMDUR;
ev_codes.REWARDON      = REWARDON;
ev_codes.GETGO         = GETGO;
ev_codes.GETNOGO       = GETNOGO;
ev_codes.GETTARGET     = GETTARGET;
ev_codes.START         = START;
ev_codes.STOP          = STOP;
ev_codes.STIMON        = STIMON;
ev_codes.STIMOFF       = STIMOFF;

```

2. Spike Array

1) Spike timing is obtained -400 to 1500ms (Stimulus onset is 0).

e.g. MN110321task_6_0

spike{1,1} = -373.9, -371.9, -293.1, -137.1, 86.5, 112.8, 726.3, 757.5, 810.8, 1212.4, 1329.3, 1358.9

The unit fired at -374, -372, -293, -137, 87, 113, 726, 758, 811, 1212, 1329, and 1359 ms from the stimulus (in this case, 'cue' on set, corresponding to event(1,:)).

2) With function 'gsmooth.m', we smoothes (normalize) with a Gaussian kernel of SD20ms, cut off $\pm 1.5SD$ (so width 1.5SD), which is about 87% of distribution. Therefore, spikes are calculated divided by 0.87 (as you see it in the attached example program).