I run the following scripts and used trialfun\_stimon\_samples.m script:

ft\_defaults;

filename = 'p029\_sort\_final\_01.nex';

spike = ft\_read\_spike(filename);

cfg = [];

cfg.spikechannel = {'sig002a\_wf', 'sig003a\_wf'};

spike\_ROI = ft\_spike\_select(cfg, spike);

% read out the LFP data

% get the cfg.trl

cfg = [];

cfg.dataset = filename;

cfg.trialfun = 'trialfun\_stimon\_samples';

cfg = ft\_definetrial(cfg);

% read in the data in trials

cfg.channel = {'AD01', 'AD02', 'AD03', 'AD04'}; % these channels contain the LFP

cfg.padding = 10; % length to which we pad for filtering

cfg.dftfreq = [60-1\*(1/10):(1/10):60+1\*(1/10) ]; % filter out 60 hz line noise

cfg.dftfilter = 'yes';

data\_lfp\_trials = ft\_preprocessing(cfg); % read in the LFP

%%creat trials for the spike structure via samples definition in 'trialfun\_stimon\_samples';

cfg = [];

cfg.dataset = filename;

cfg.trialfun = 'trialfun\_stimon\_samples';

cfg = ft\_definetrial(cfg);

trl = cfg.trl;

cfg = [];

cfg.hdr = data\_lfp\_trials.hdr; % contains information for conversion of samples to timestamps

cfg.trlunit = 'samples';

cfg.trl = trl; % now in samples

spikeTrials = ft\_spike\_maketrials(cfg,spike\_ROI);

Then I got the structure which is not the same as the tutorial.

spikeTrials =

 struct with fields:

 label: {'sig002a\_wf' 'sig003a\_wf'}

 timestamp: {[1×83616 int32] [1×61526 int32]}

 waveform: {[1×32×83616 double] [1×32×61526 double]}

 unit: {[1×83616 double] [1×61526 double]}

 hdr: [1×1 struct]

 dimord: '{chan}\_lead\_time\_spike'

 cfg: [1×1 struct]

 time: {[1×83616 double] [1×61526 double]}

 trial: {[1×83616 double] [1×61526 double]}

trialtime: [600×2 double]

I run the following script:

cfg = [];

cfg.timwin = [-0.25 0.25]; % take 500 ms

cfg.spikechannel = spikeTrials.label{1}; % first unit

cfg.channel = data\_lfp\_trials.label(1:4); % first four chans

cfg.latency = 'poststim'; %can be 'prestim' onset or 'poststim' onset, or [0.3 5] after stimulus onset or [-1 0] before stimulus onset, unit is second

cfg.keeptrials ='yes';

staPost\_trials = ft\_spiketriggeredaverage(cfg, data\_all\_trials);

figure

plot(staPost\_trials.time, staPost\_trials.avg(:,:))

legend(data\_lfp\_trials.label)

xlabel('time (s)')

xlim(cfg.timwin)

cfg = [];

cfg.timwin = [-0.25 0.25]; % take 400 ms

cfg.spikechannel = spikeTrials.label{1}; % first unit

cfg.channel = data\_lfp\_trials.label(1:4); % first four chans

cfg.latency = [-2.75 0]; %from 2.75s before stimulus onset until stimulus onset

cfg.keeptrials ='yes';

staPre\_trials = ft\_spiketriggeredaverage(cfg, data\_all\_trials);

figure

plot(staPre\_trials.time, staPre\_trials.avg(:,:))

legend(data\_lfp\_trials.label)

xlabel('time (s)')

xlim(cfg.timwin)

But the figures are the same (shown in the following) rather than different figures as in tutorial.

