**Visual Stimulation Script: list and description of updates**

% Visual Stimulation Script - Alex Brown

% Adapted from Bruno Pichler's Grating Script

% recent updates by Alex Tran-Van-Minh

**Installation:**

* Copy full folder
* Modify filepath (line 91) and statusfilepath (line 96) in VisStimAlex function, and NI Card Parameters (line 177-179) to match local values (and make sure statusfilepath exists)
* Also adjust the following parameters to the specific setup :

% Screen parameters:

p.addParamValue('screenWidthCm', 53);

% screen size in cm

p.addParamValue('mouseDistanceCm', 10);

* If adding only new stimulus generating functions it is likely you will need to update also : VisStimAlex, setstimulusinfobasicparams, setstimulusinfostimuli

For previous versions see:

<https://github.com/atranvan/visstim> forked from <https://github.com/alexanderbrown/visstim>

**25/01/2018 updated runbaseline so that baseline screen color can be chosen to be gray or black (gray baseline screen is useful so that pupil diameter has time to stabilize at onset while used in combination with MonitorFlicker for 2P imaging)**

**10/01/2018 added SpotRet and SpotRetTriggered function for retinotopy mapping for ISI - use parameters locationX and locationY to change the location of the center of the spot.**

**Default size is 40 deg (as in Andermann et al. 2011) this can also be changed via diameterDeg parameter**

**09/01/2018 fixed difference in spatial frequency for central spot in SpotDrifting and HoldDriftSpotRotatedHoldGray functions**

**22/11/2017 corrected the shift in phase in HoldDriftSpotRotatedHoldGray functions (triggered and untriggered), added SpotDrifting and SpotDriftingTriggered function (same display than HoldDriftSpotRotatedHoldGray but gray screen instead of external full field grating)**

**19/10/2017 added HoldPlaidHoldGray function**

**12/10/2017 added HoldDriftSpotRotatedHoldGray function**

In the middle of the drift displays a central spot containing a grating drifting with a 90 degree rotation relative to the full screen grating

For timing of different parts use preDriftHoldTime, driftTime, spotDriftTime, postDriftHoldTime, postDriftGrayTime

*This is just a first version and will be modified to add more parameters controlling the inner grating and its location on screen and some bugs need fixing*

**04/10/2017**  **added HoldDriftHoldGray and, HoldDriftReverseDriftHoldGray functions**

Full screen reversed grating is displayed in the middle of the stimulus

For timing of different parts use preDriftHoldTime, driftTime, reverseDriftTime, postDriftHoldTime, postDriftGrayTime

**18/08/2017** modified sparseNoise, sparseNoiseGray and RFNoiseMapping to include photodiode option

Modified generateSparseStimuli so that dots do not overlap the photodiode location

**16/08/2017 added new stimulus function RFNoiseMapping and associated helper function generateSparseMappingStimuli**

Very sparse Noise (1 square at a time, black or white, followed by a gray screen), displayed at nStimFramesMapping positions

Default is 120 positions spanning 96 x 78 degrees (as in Iacaruso et al. 2017 Nature)

**15/08/2017 added new stimulus function sparseNoiseGray**

Sparse noise followed by gray screen (input parameters added: SpotTime, postSpotGrayTime in %Sparse Noise parameters section)

Now the spotSizeMean and range inputs are in degrees of visual angle (it was in pixels until now)

**04/06/2017 updated to include new stimulus functions (fullscreenPulse)**

Functions modified: VisStimAlex, setstimulusinfostimuli, setstimulusinfobasicparams

New functions: in /StimulusGeneratingFunctions: fullscPulse, fullscPulseTriggered

fullscPulse: flip between black and gray screen (input parameters: black screen duration, gray screen duration, gray screen luminance)

**05/04/2017 updated to include new stimulus functions (Plaid stimulus and Drift followed by gray screen)**

Functions modified: VisStimAlex, setstimulusinfostimuli, setstimulusinfobasicparams

New functions: in /StimulusGeneratingFunctions: Plaid, PlaidTriggered, DriftGray, DriftGrayTriggered

Plaid stimulus: the plaid angle is an input parameter

DriftGray stimulus: the gray screen time is an input parameter

**22/11/2016 updated by ATVM to replace deprecated function getvalue by inputsinglescan (for triggered stimuli) in recent Matlab versions**