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| --- | --- | --- | --- | --- |
| data for different stimuli converted to pseudocalcium traces (processed data) | | | | |
| **Variable name** | **Dim1** | **Dim2** | **Dim3** | **Remark** |
| condition | #cell |  |  | Cells after removing noisy data (653 of 892 cells were used for final clustering). |
| sidx | #cell |  |  | Indices of cells sorted by cluster numbers |
| With\_sta | #cell |  |  | Indices of cells with significant STA |
| cluster\_idx | #cell |  |  | Cluster numbers for data sorted by *sidx* |
| chirp\_avg | #cell | Time sample |  | Median of chirp response. Normalized to max(abs()) |
| chirp\_time | time sample |  |  | Time base of chirp response |
| color\_avg | #cell | Time sample |  | Median of color response. Normalized to max(abs()) |
| color\_time | time sample |  |  | Time base of chirp response |
| flash\_avg | #cell | Time sample |  | Median of flash response. Normalized to max(abs()) |
| flash\_time | time sample |  |  | Time base of chirp response |
| bar\_avg | #cell | Time sample |  | Average of bar response. Normalized to max(abs()) |
| bar\_time | time sample |  |  | Time base of moving bar response |
| bar\_trials | #recording | #cell | #direction | Response of individual cells to average of closest bar and two neighboring bars for each direction. |
| SPK | Spike time | #trial | #cell | Spike times for all 892 cells |
| with\_sta | #cell |  |  | Cells with a significant STA |
| e\_STAs | #cell |  |  | STA of each cell with clusters |
| trace\_norm | sample |  |  | Normalized OGB kernel |
| trace\_norm\_auc | sample |  |  | OGB kernel with area under the curve normalized to 1 |
| ts\_trace | time sample |  |  | Time base of OGB kernel |
| HT\_dataname |  |  |  | Nested structures with hitting time of each moving bar stimulus for each channel |
| ds\_list |  |  |  | Metadata for each recording including corresponding hitting time file |

Data from: “***Classification of pseudocalcium visual responses from mouse retinal ganglion cells****”.*

The dataset includes spike times of 9 different recordings of retina ganglion cells and *pseudocalcium traces after convolving spikes with OGB kernel.* Extracellular data is recorded with multielectrode array (Multi Channel Systems).

* visualization\_script: this code plots the clusters and generates following variables:
* DATA: includes the raw data of each recording. Spike times and trigger times of both visual and electrical stimulation.

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| Variables in each recording file (raw data) | |
| **Variables name** | ***Remarks*** |
| A1a  A2a  A3a | Photodiode signal monitoring the global visual stimulation brightness. (used only for calibration and ‘reality check’.  TTL triggers of electrical stimulation.  TTL triggers of visual stimulation. |
| adch\_channel\_unit | Spike time of each unit. One channel can have more than one unit. |
| trgss | Triggers of visual stimulation sorted by name of stimulus |

* HT\_’recordingname’: This data contains geometrical information of MEAs for each recording. From this information, we compute the hitting times for the moving-bar stimuli. The moving bar stimulus includes 8 different directions and for each channel, we can estimate when the stimulus hits the given channel (electrode) of the MEA.

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| Geometrical information for each MEA during recording | |
| **Variables name** | ***Remarks*** |
| HT | Hitting time tables of individual recordings, i.e. The time that the leading edge of the moving bar hits the electrode. |
| xy\_diff | the distance of each electrode to the center of MEA in um. These data are used to compute HT.   * First row shows x coordinate * Second row shows y coordinate |
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| PSTH for each stimulus | |
| **Variables name** | ***Remarks*** |
| BG | Spike times and average of normal and ogb PSTHs of each channel over trials for color stimulus. Normalized to max(abs()) |
| Flash | Spike times and average of normal and ogb PSTHs of each channel over trials for flash stimulus. Normalized to max(abs()) |
| Chirp | Spike times and average of normal and ogb PSTHs of each channel over trials for chirp stimulus. Normalized to max(abs()) |
| Moving bar | Spike times for each cell and each location, and average of normal and ogb PSTHs of each channel over trials for moving bar stimulus. Normalized to max(abs()) |
| e\_STA\_’recordingname’ | Spike times and electrical STA of each channel |

* Matlab\_results: this folder contains normal and OGB PSTHs: