This datasets contains 340 trials of widefield imaging data from an awake mouse, performing an auditory rate discrimination task. The widefield data was acquired in a transgenic animal, expressing GCaMP6s under the PlexinD1 promotor (in excitatory, cortico-cortical and cortico-striatal projection neurons).

The animal ID in this recording is Plex66 (variable ‘Animal’ in some functions).

The behavioral setup was controlled by the Bpod state machine system (sanworks.io) and behavioral data is saved under 'Plex66\_SpatialDisc\_Oct17\_2020\_Session1.mat'.

The framerate of the dataset is 60Hz, with the excitation light switching between blue and violet light on every frame. This leads to an effective framerate of 30Hz with blue excitation light, which can be corrected for intrinsic fluorescence by re-scaling and subtracting frames with violet exposure light.

Each trial contains 3 seconds of pre-stimulus data until the auditory stimulus was presented. Subsequently, each trial contains 3.83 seconds of post-stimulus data.

This dataset is intended as a raw data example for the tutorial script 'Tutorial\_dimReduction.m'. The tutorial can be found here: https://github.com/musall/WidefieldImager/tree/master/Analysis

The tutorial shows how to load dual-wavelength imaging data, perform efficient dimensionality reduction and correction for non-neural fluorescence sources.

Note that due to its large size, processing will require a significant amount of RAM and several hours of computation time.