Motion blindness induced by color in zebrafish larvea *Danio rerio*

Alexander Wendt, Patrick Weygoldt

Systems Neurobiology, Department of Neurobiology, University of Tuebingen

EBERHARD KARLS UNIVERSITÄT TÜBINGEN

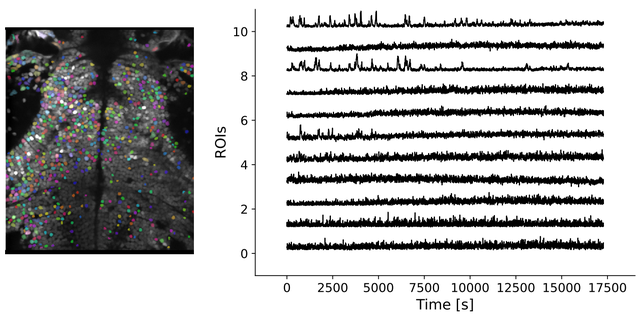
Introduction

Color has a big influence on motion vision in zebrafish. Michael B. Orger (2004) displayed that zebrafish in behavioural experiments show motion blindness to a grating of different colors, but little is known about the cortical structures conveing the „color-motion“ perception. We wanted to the investigate the optic tectum of the zebrafish larvae with calcium imaging.

figs/dsc_2193_02.jpg

Preprocessing:

1. Region of Interests (ROI): corrosponds to neurons with genetically encoded caclium indicators. The lumiance f of the calcium imaging is calculated from the change of luminance normalized to the average luminance $f = \frac{\Delta f}{f}$.



2. Active ROIs: To get the active ROIs we computed the correlation within repeats.

Detected modulations

We found phases of synchrony up to 50 Hz in $\triangle$EODf that lasted for over 10 minutes. Synchronous modulations ranged from clearly distinguishable and steep rises to smooth modulations with low EODf increases.

figs/selected_modulations.pdf

figs/eventposition_2.pdf

Contact: patrick.weygoldt@student.uni-tuebingen.de