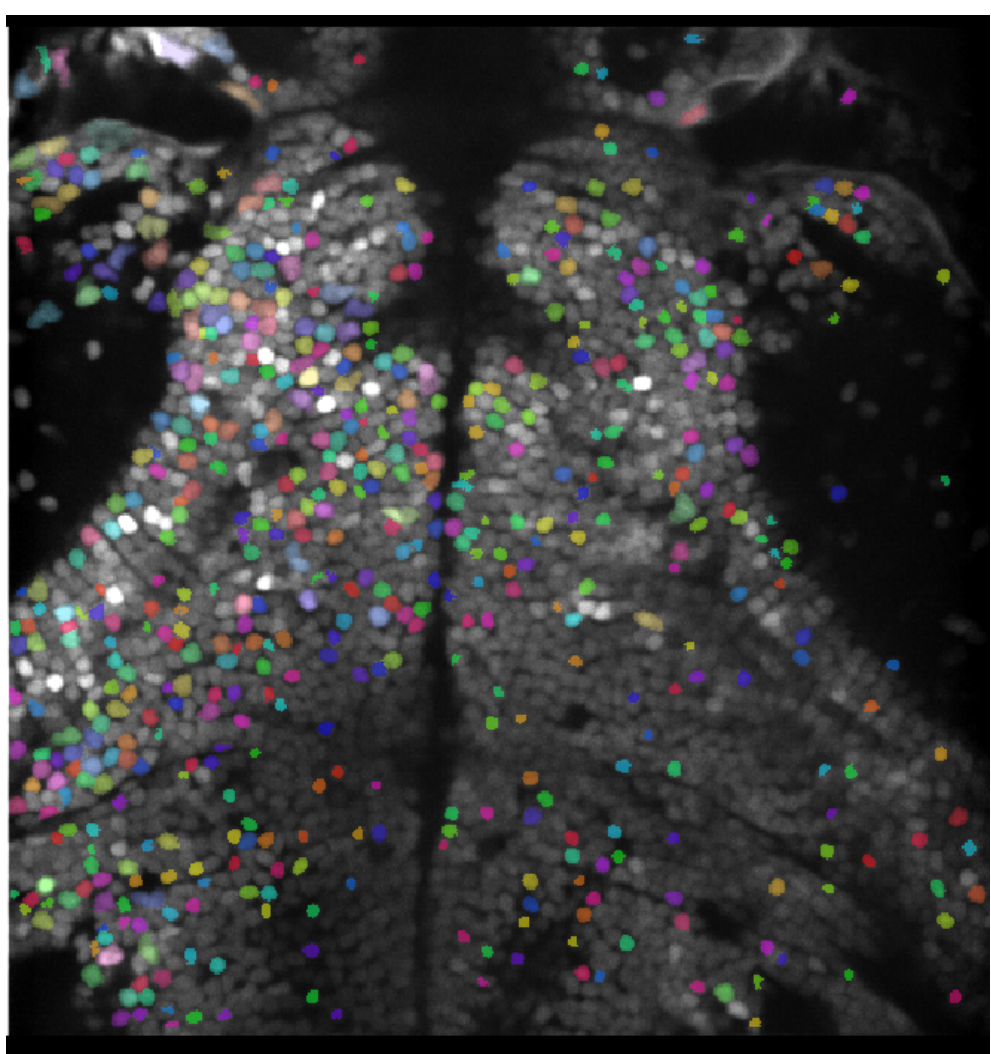


# Motion blindness induced by color in zebrafish larvea

## Danio rerio

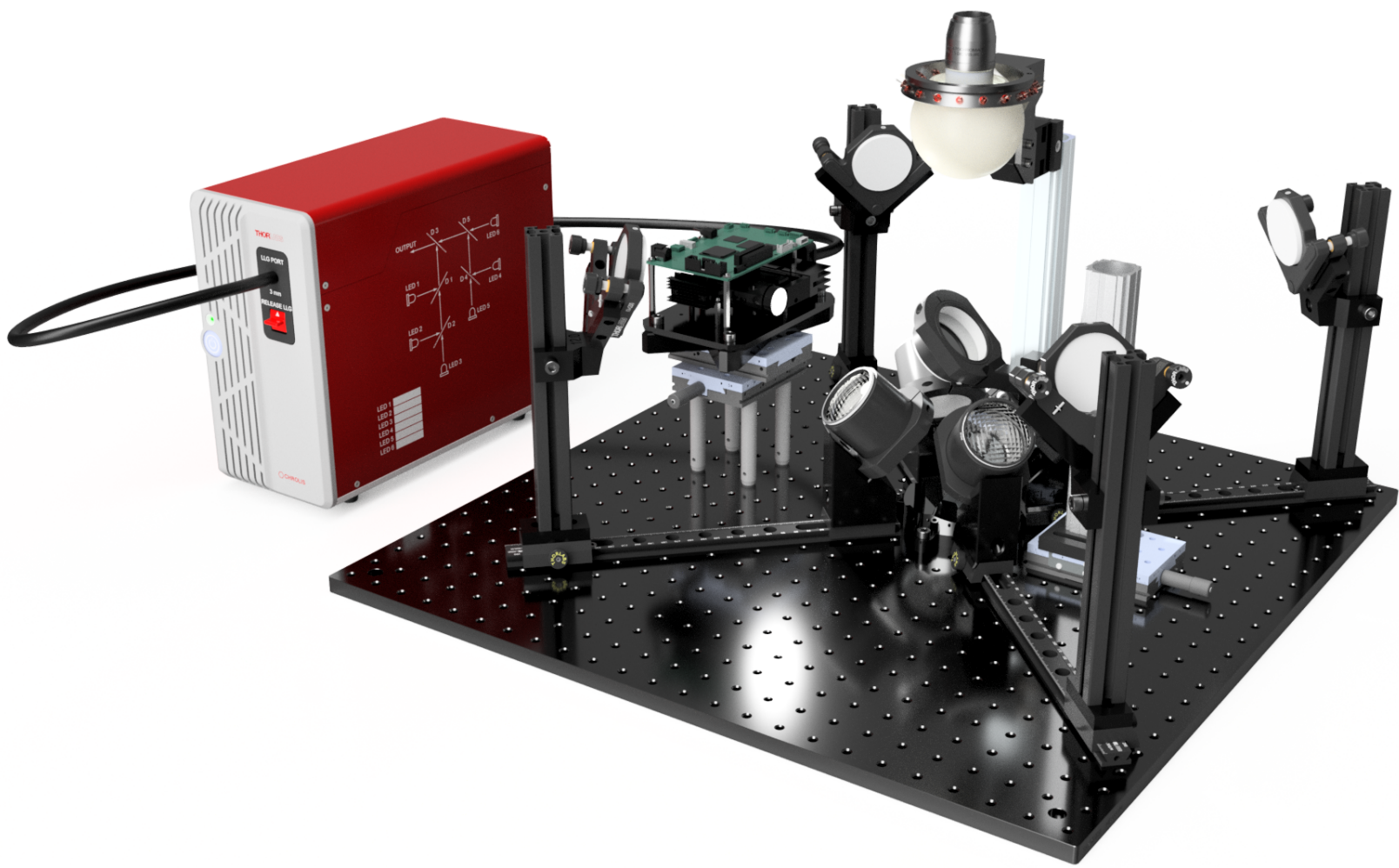
Alexander Wendt, Patrick Weygoldt

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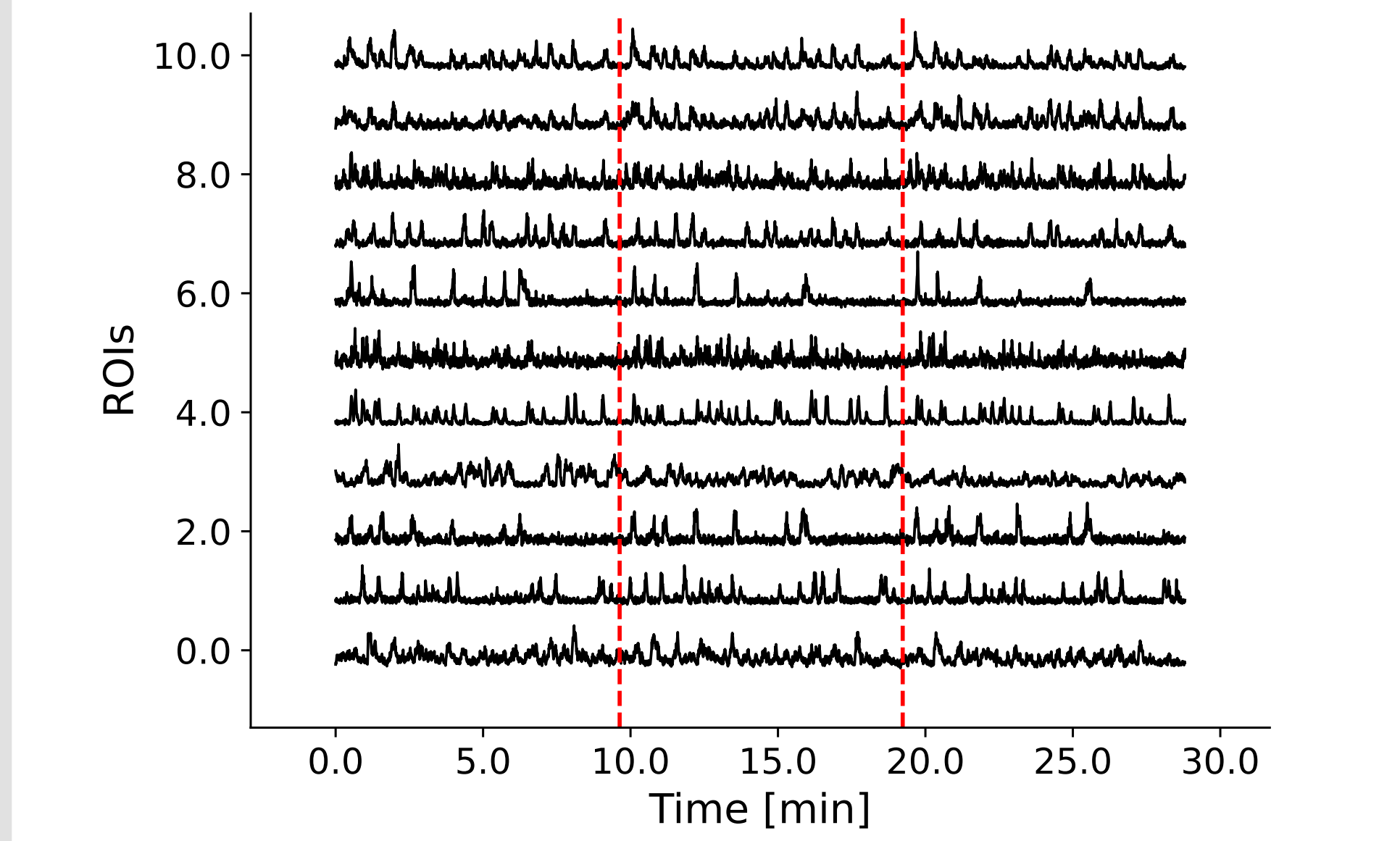
### Introduction

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 conveying the „color-motion“ perception. We wanted to investigate the optic tectum of the zebrafish larvae with calcium imaging.

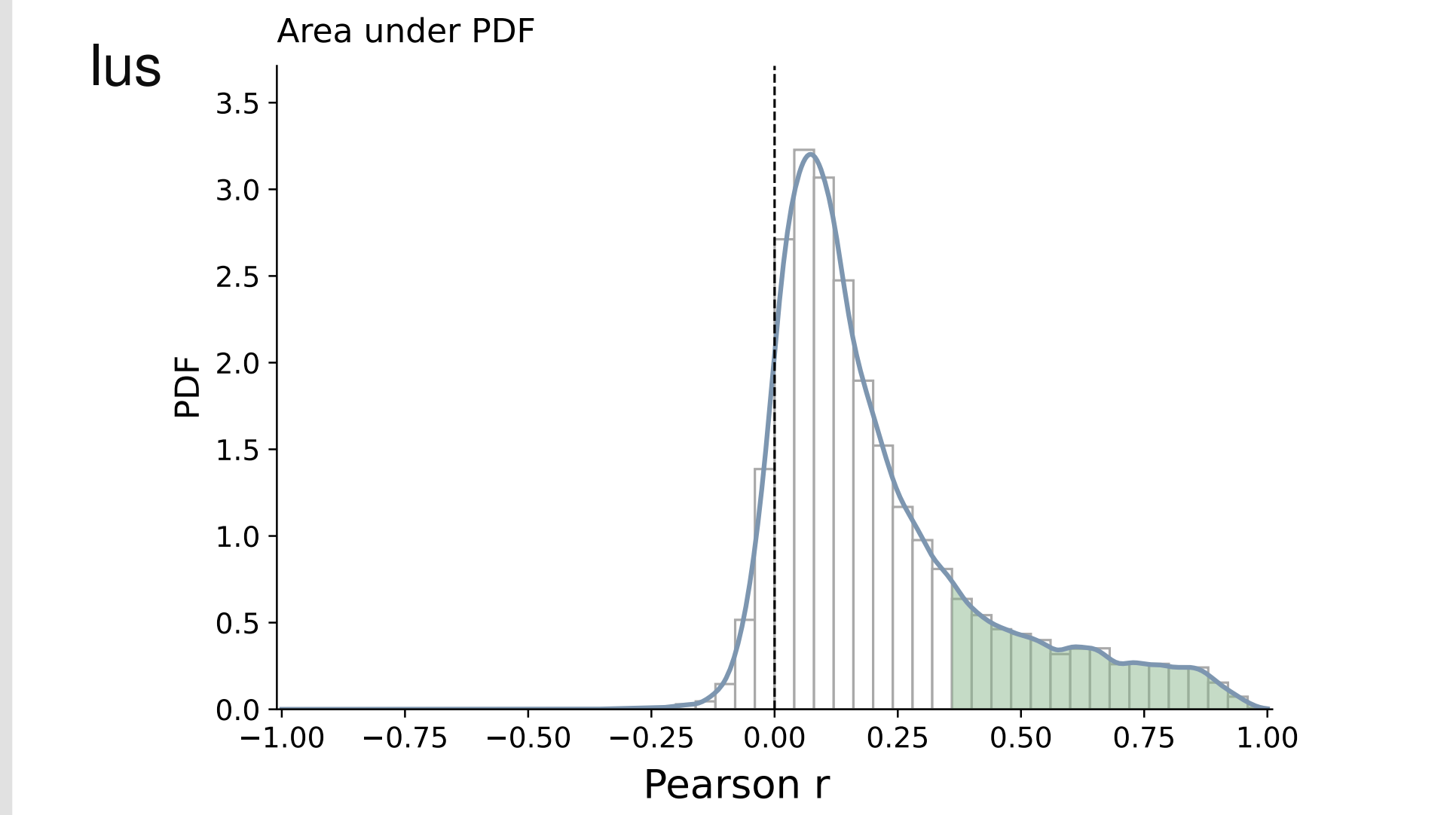


### Preprocessing:

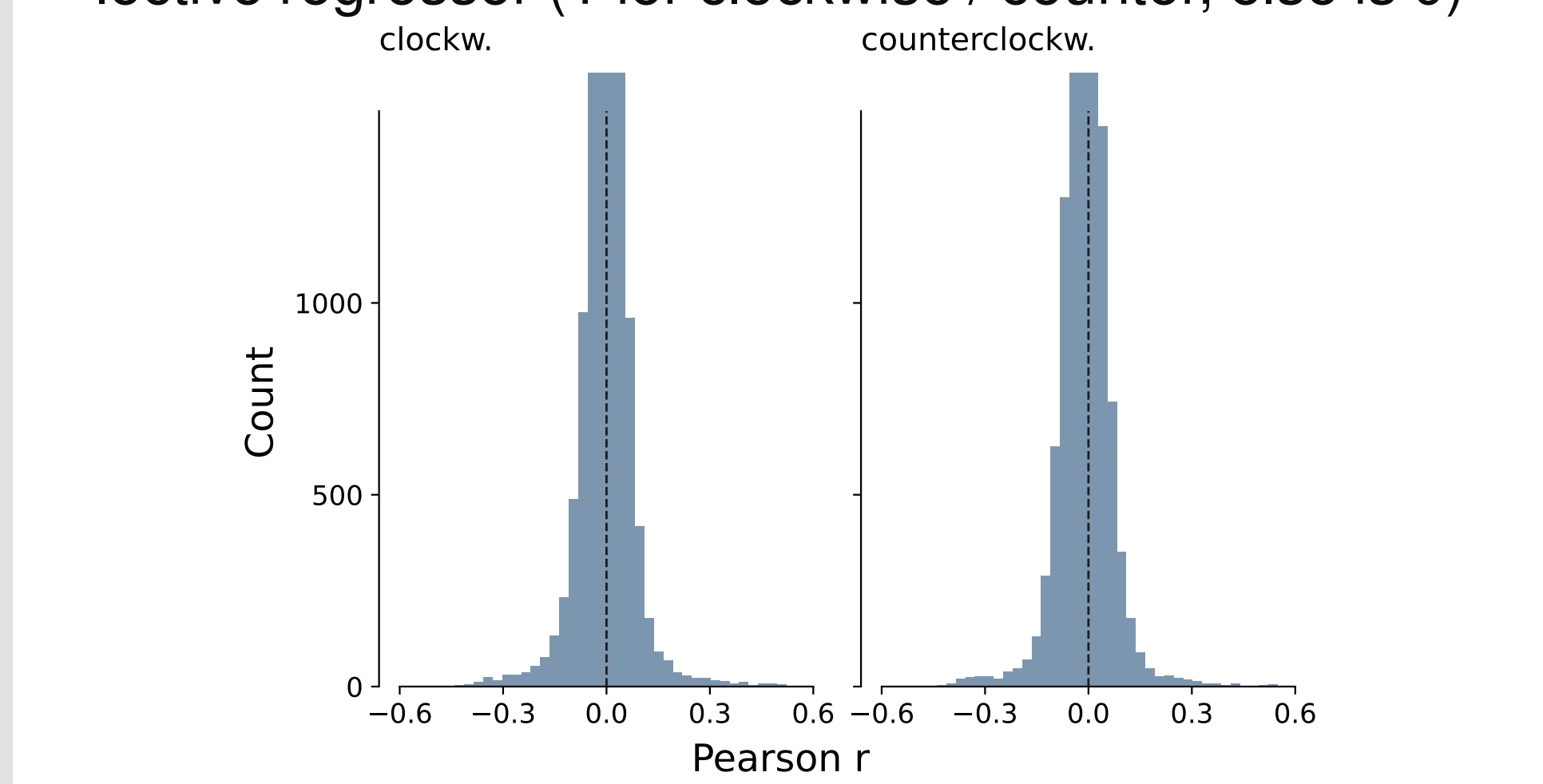
**1. Region of Interests (ROI):** corresponds to neurons with genetically. The lumiance  $F$  of the calcium imaging is calculated from the change of luminance normalized to the average luminance  $F = \frac{\Delta F}{F}$ .



**2. Active ROIs:** To get the active ROIs we computed the correlation within 3 repeats of the same stimulus

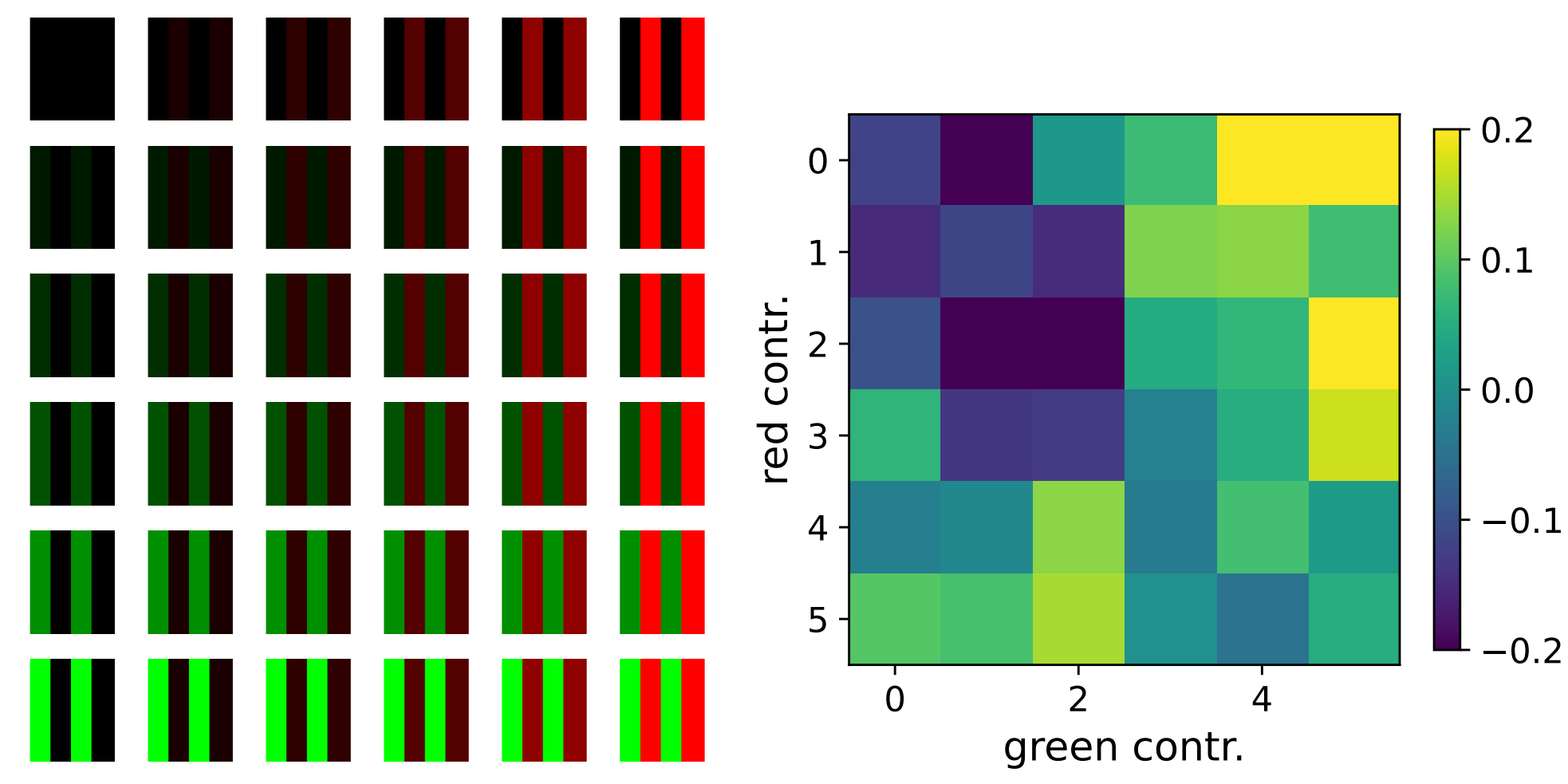


**2. Direction selective ROIs:** next Step was to search for ROIs that correlated with a direction selective regressor (1 for clockwise / counter, else is 0)

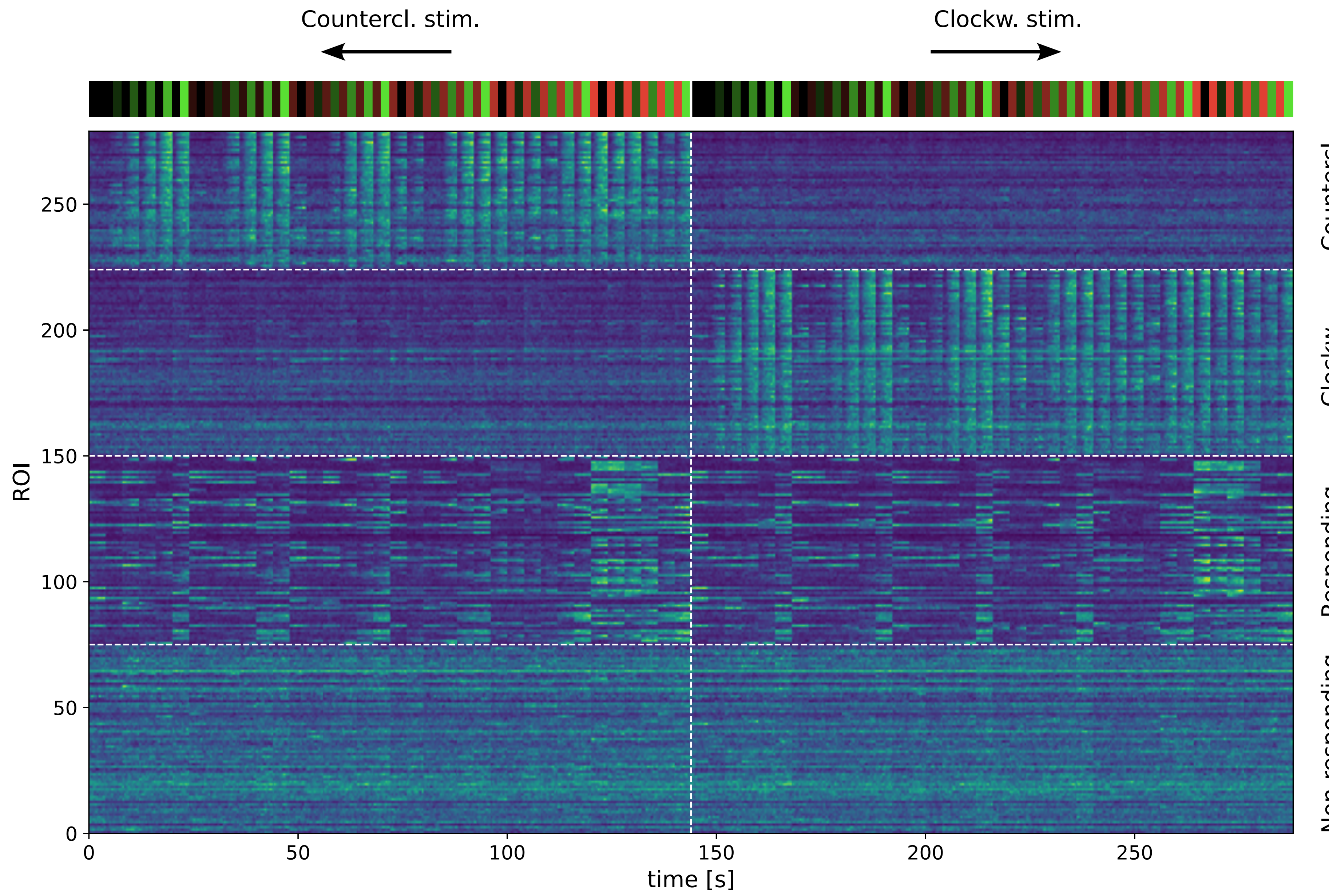
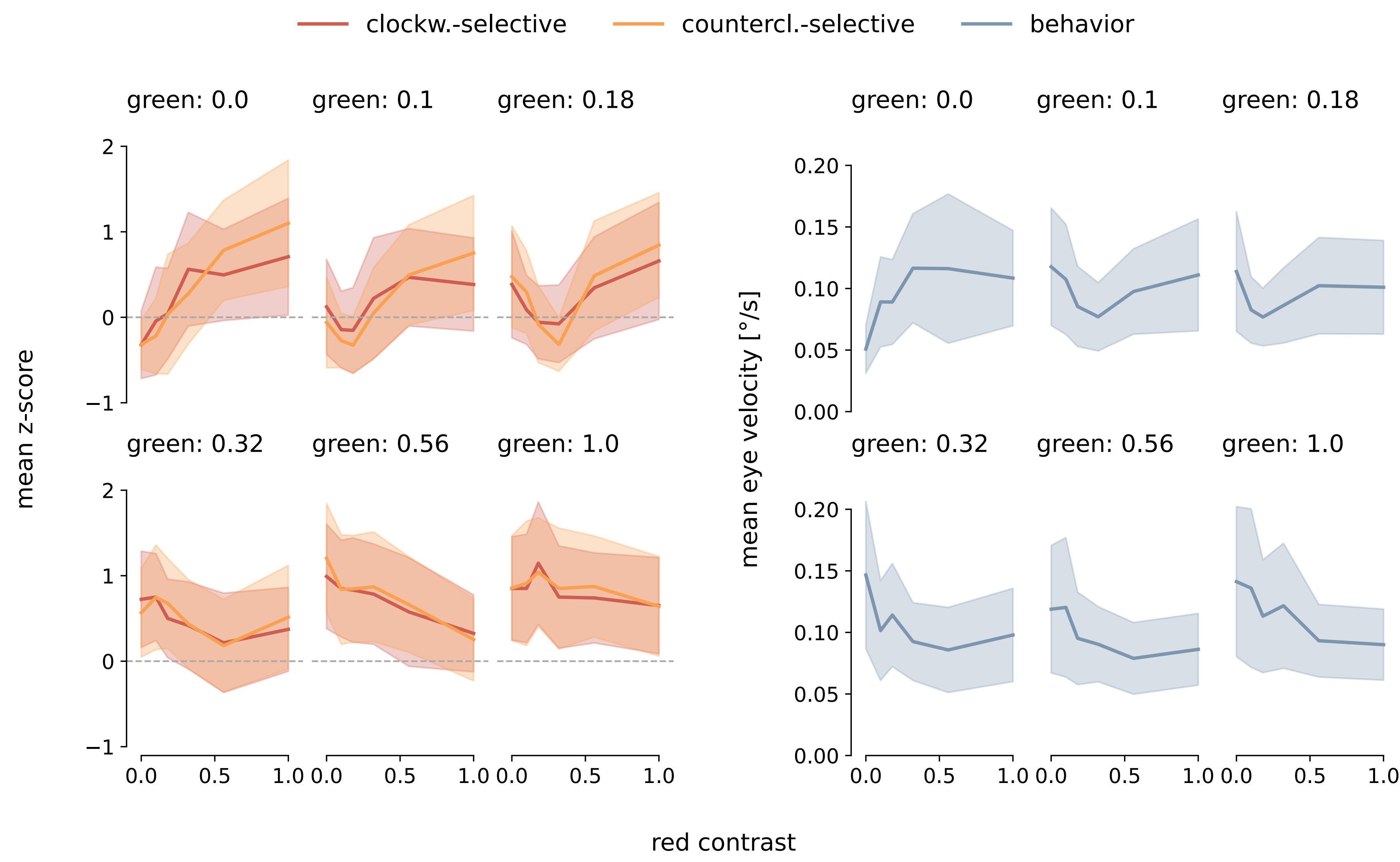
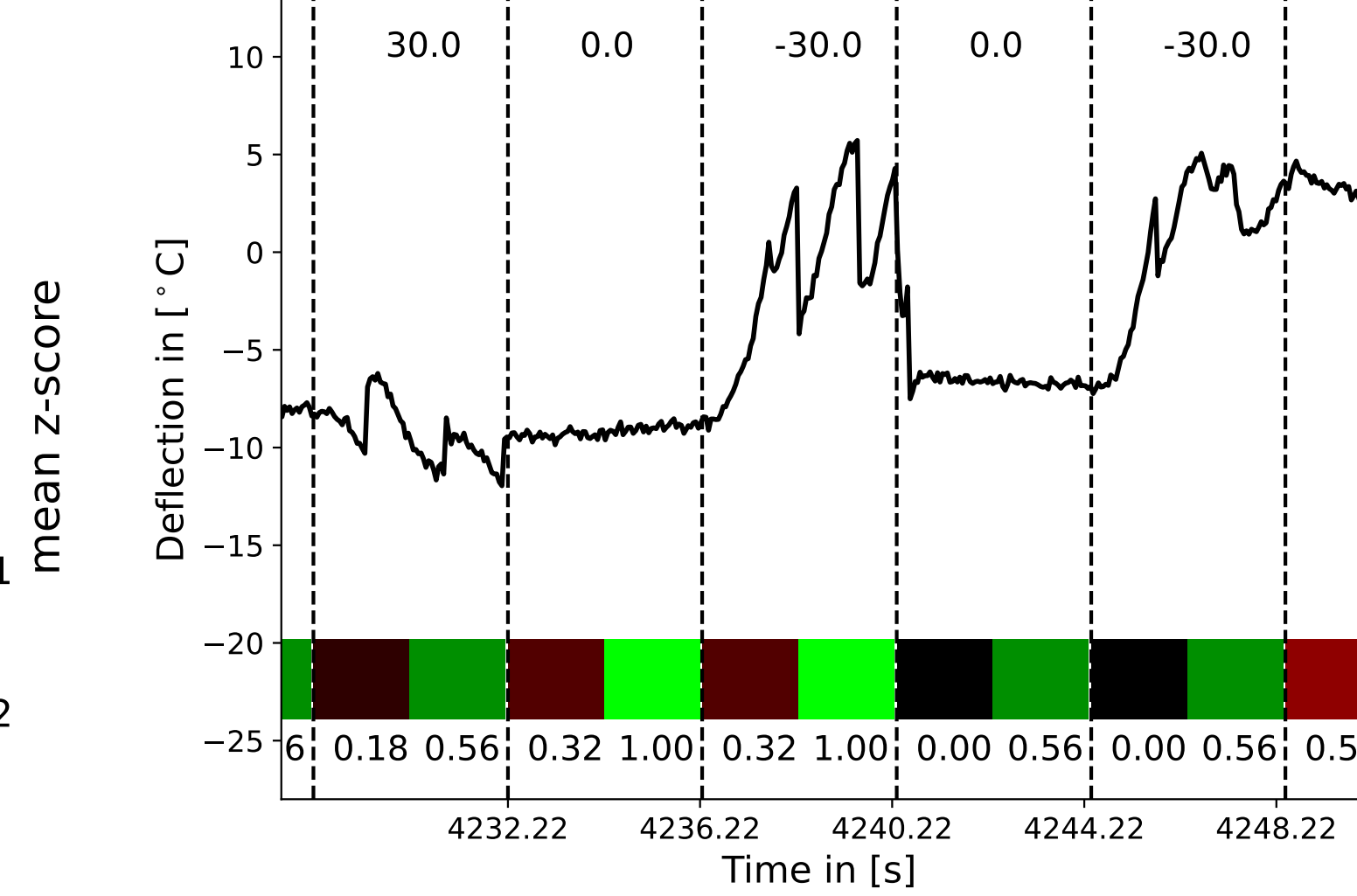


### Motion blindness calcium data vs behavior

Calcium:



Bahvior:



### Conclusion

- The optic tectum is mottion blind for various contrast levels