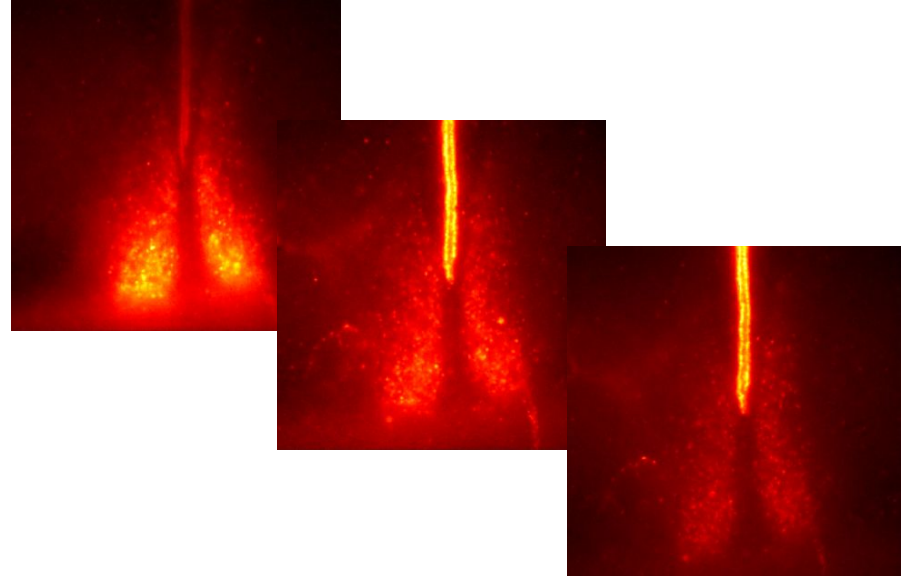
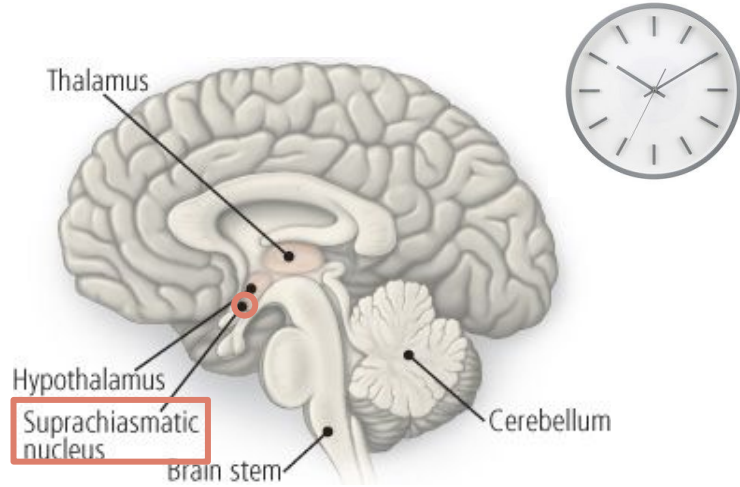




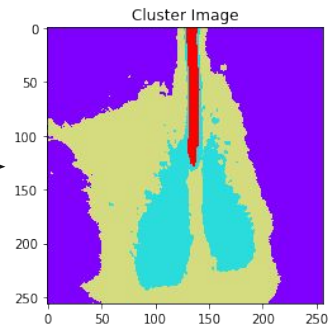
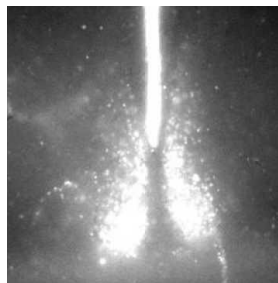
Circadian Rhythm in the Brain

Maxi Fischer, Elizaveta Korotkova, Kateryna Peikova, Katharina Fogelberg

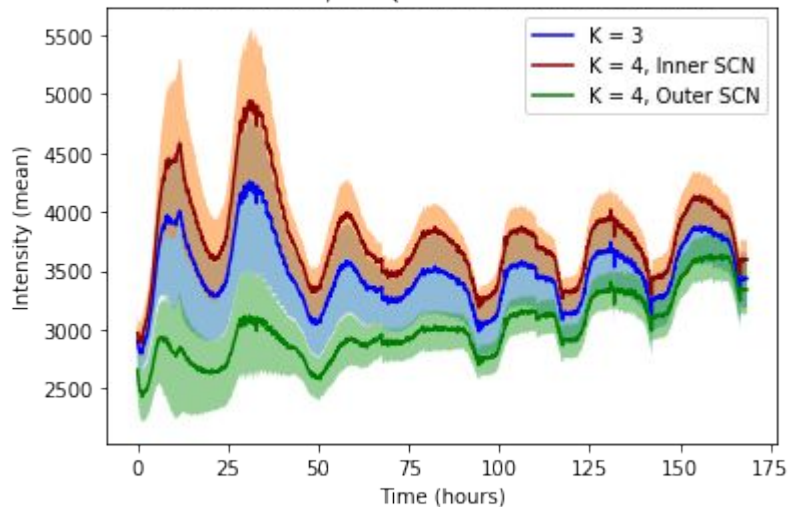
Circadian Rhythm and Dataset



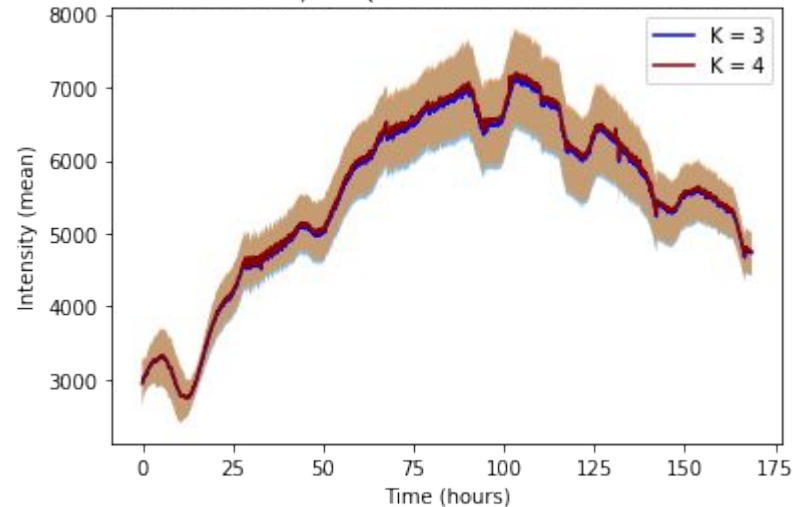
Clustering



Mean and 1st/3rd Quantile Time Series of SCN



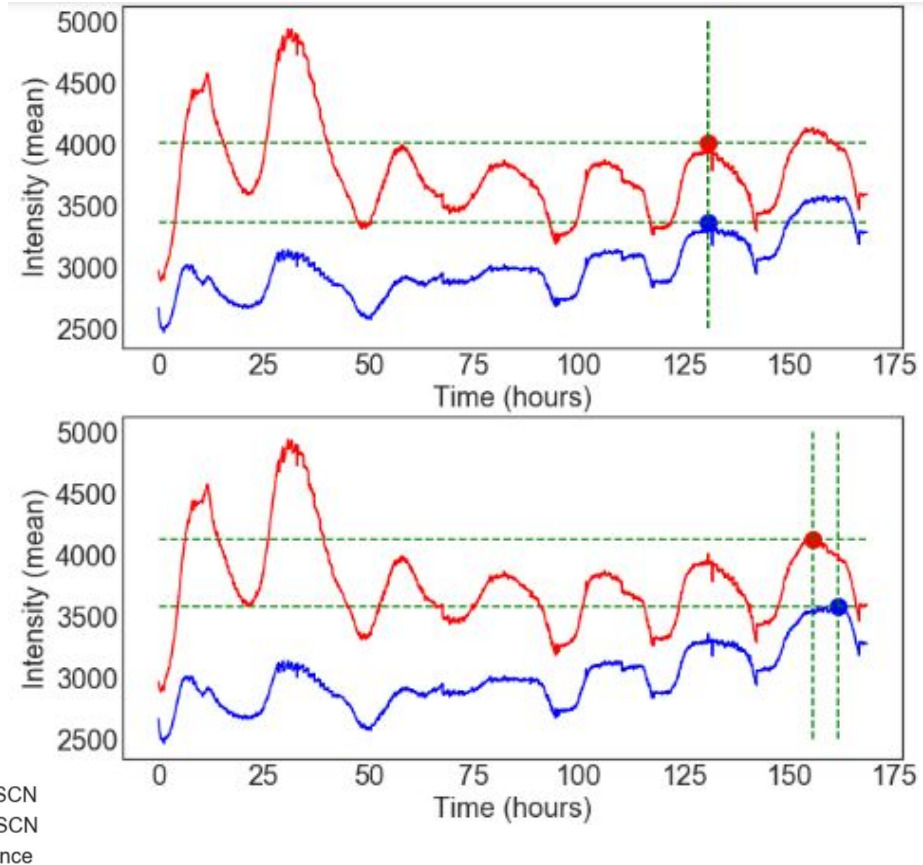
Mean and 1st/3rd Quantile Time Series of Ventricle



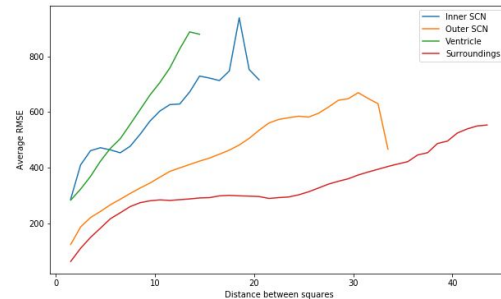
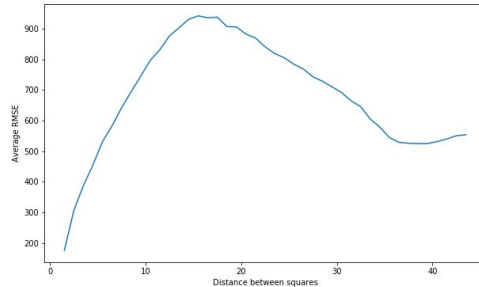
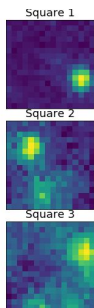
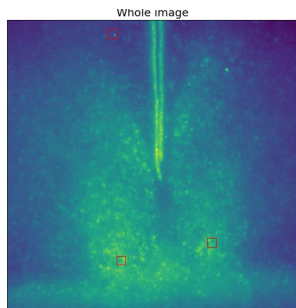
Regularity of the Signal

1) General Period (FFT)

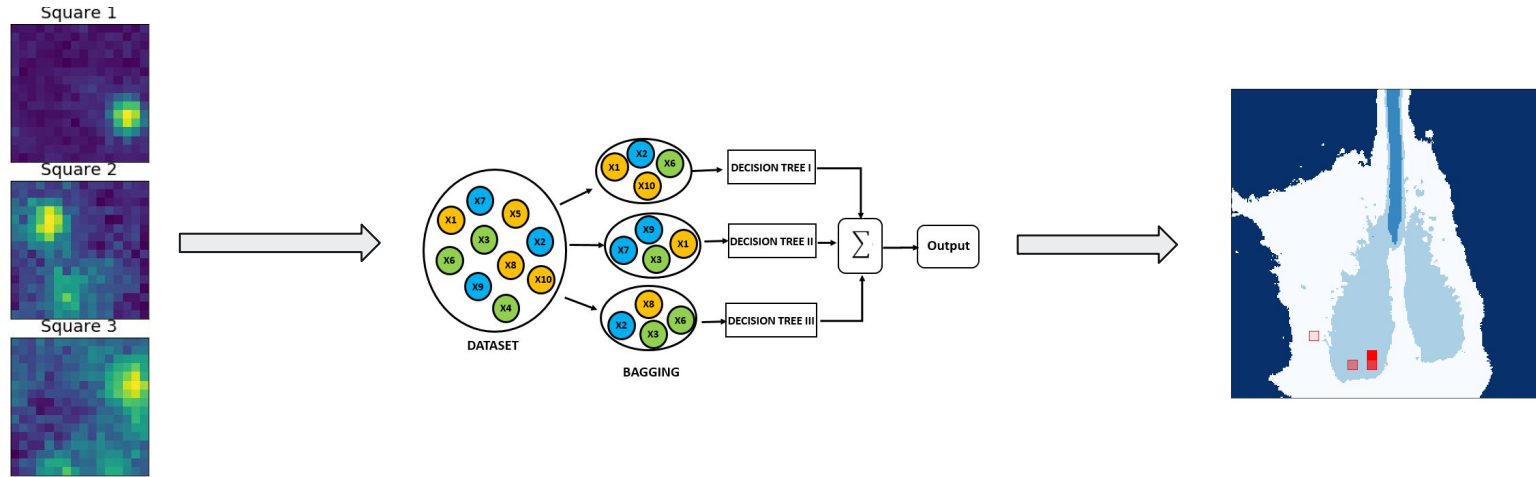
Mean period	24.2 hours
Standard Deviation	0.499
Power Spectrum	23.7 hours



Synchronization of Cells and Cell Groups

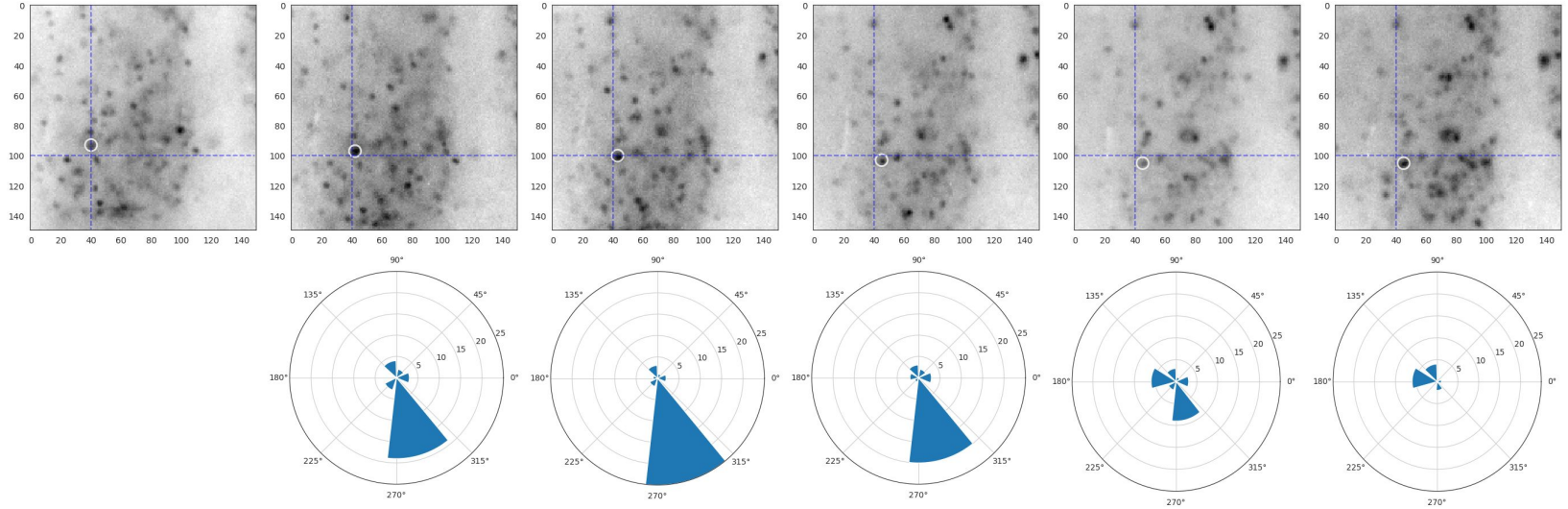


Circadian Rhythm as a Decoding Task



1.06h error

Cell Movement





Conclusion

- 4 distinct clusters
- period is circa 24 h
- shifting patterns in the SCN
- closer cells behave similarly
- decoding with RMSE of 1.06 h
- cells move slightly in the beginning



Thank you for your attention!