

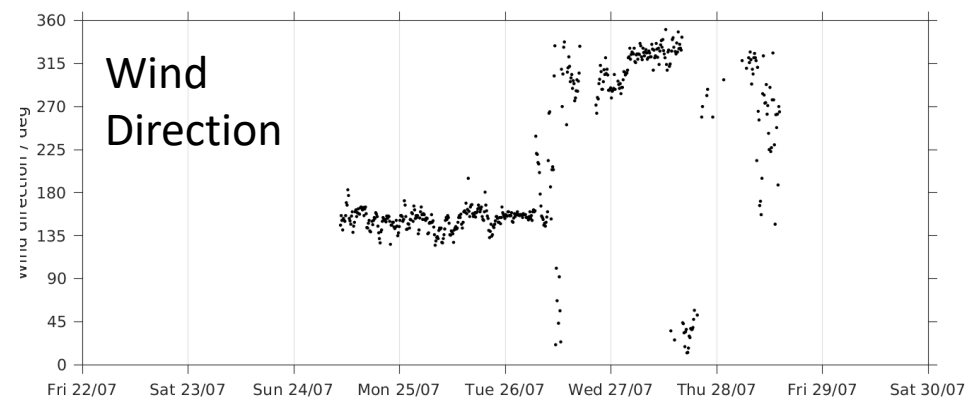
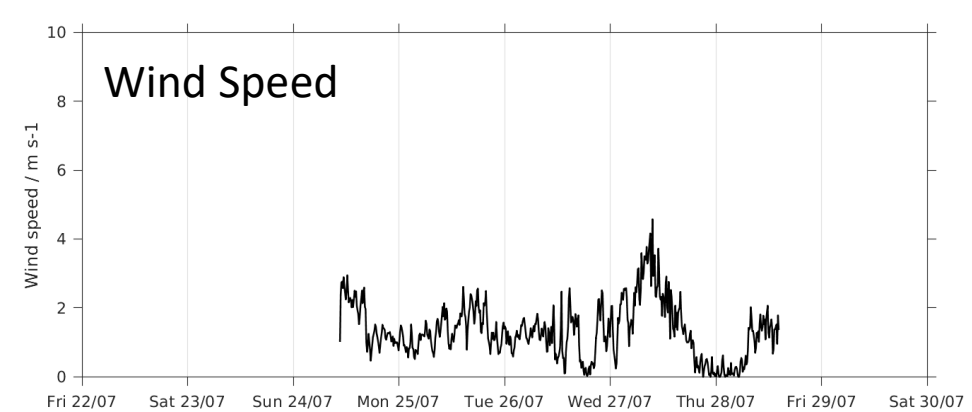
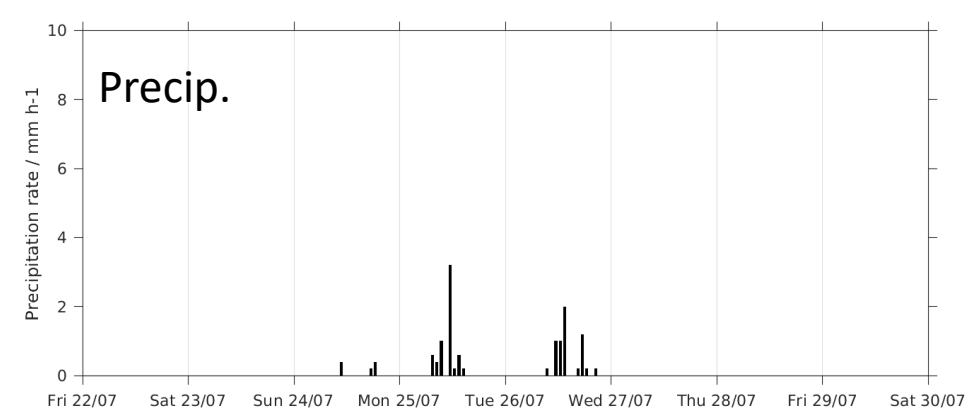
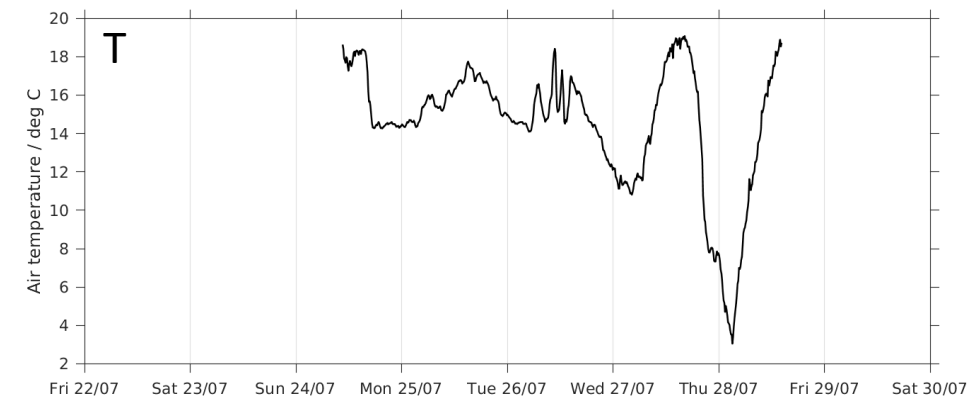
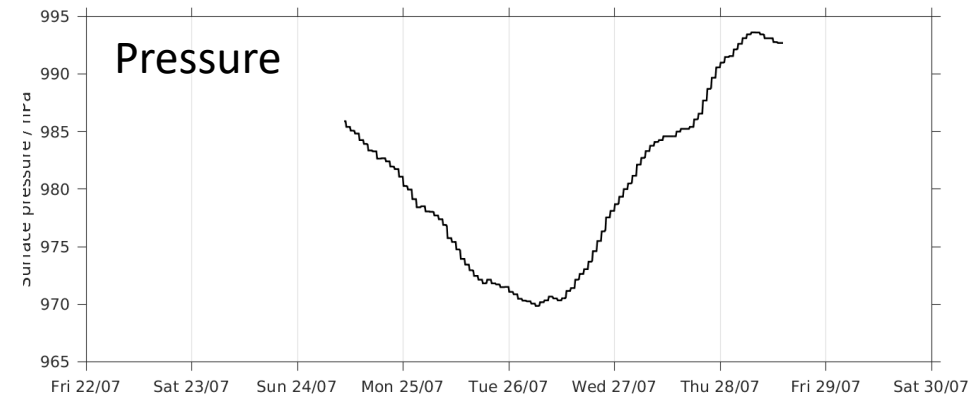
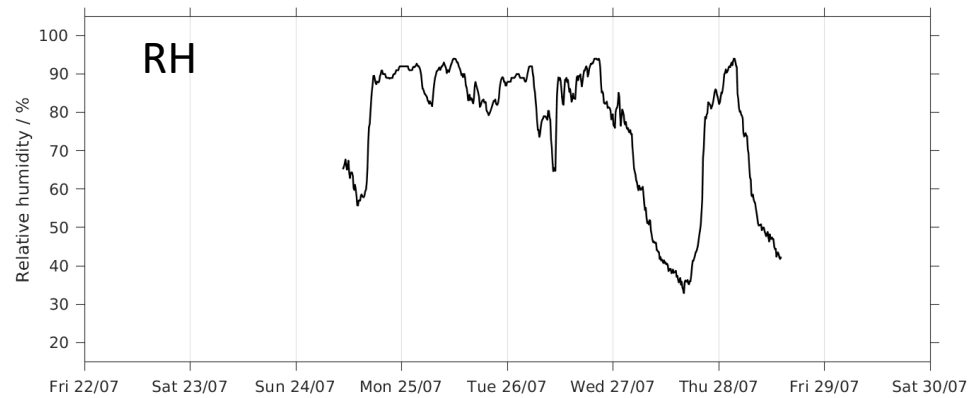
Summer School Starmoen  
24-31 July 2022





# Meteorological Instruments



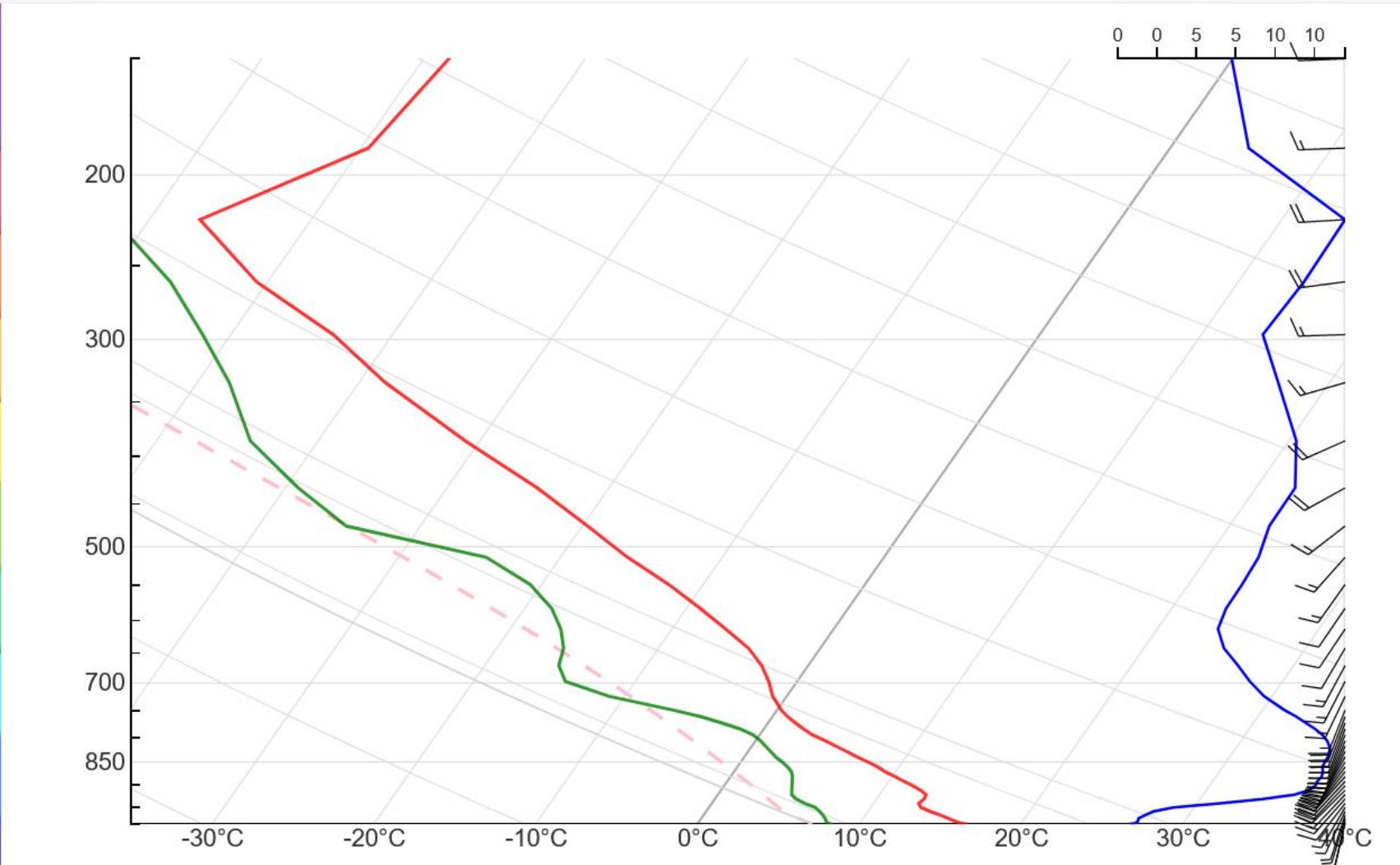
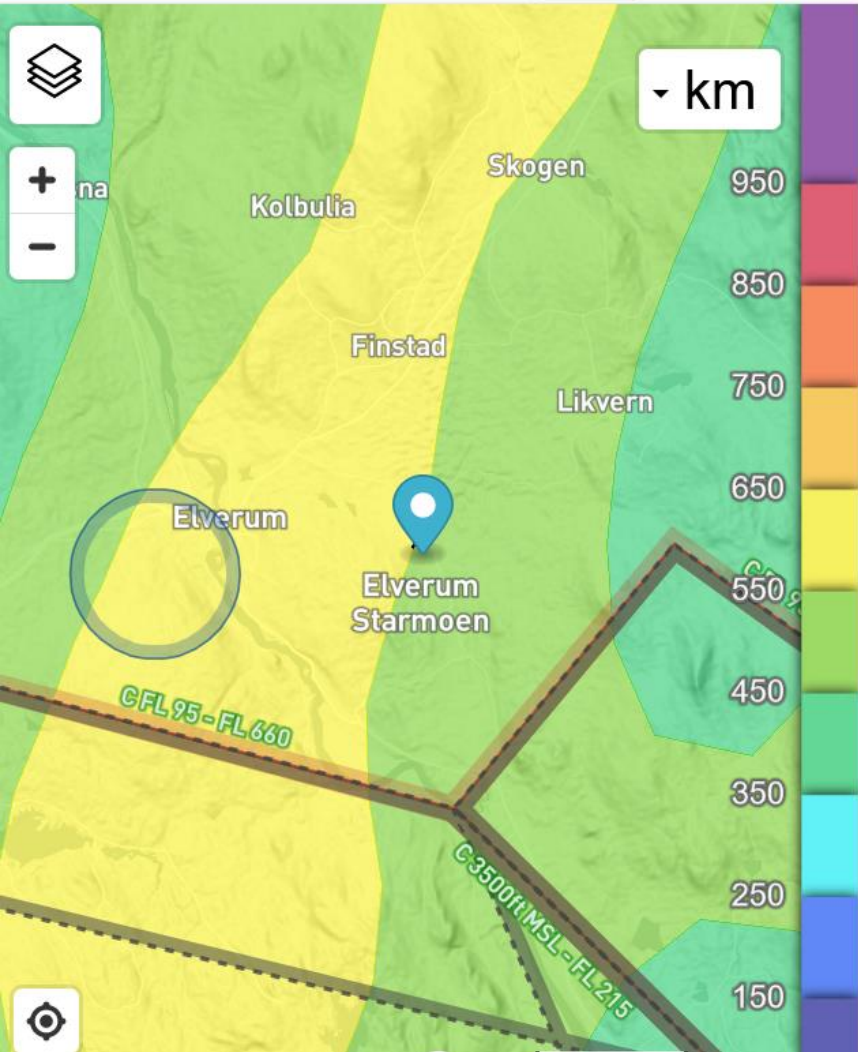














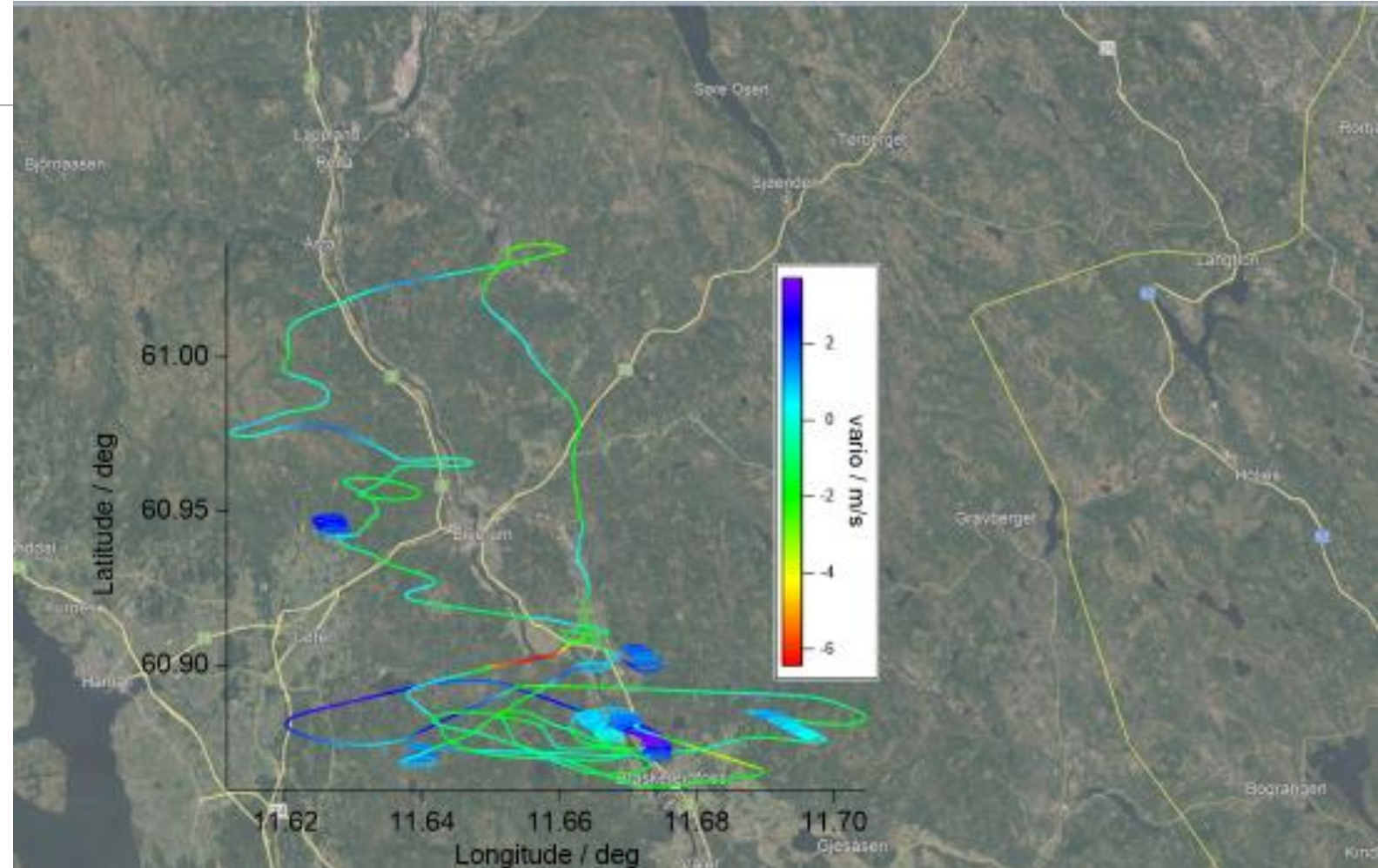
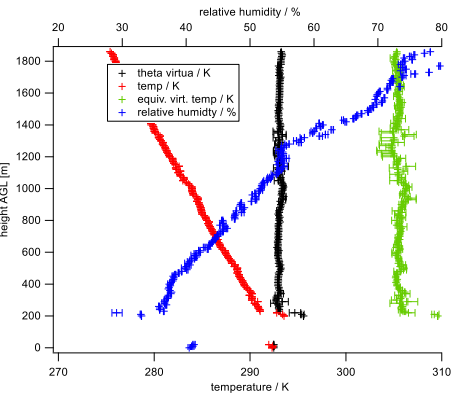






# Glider studies

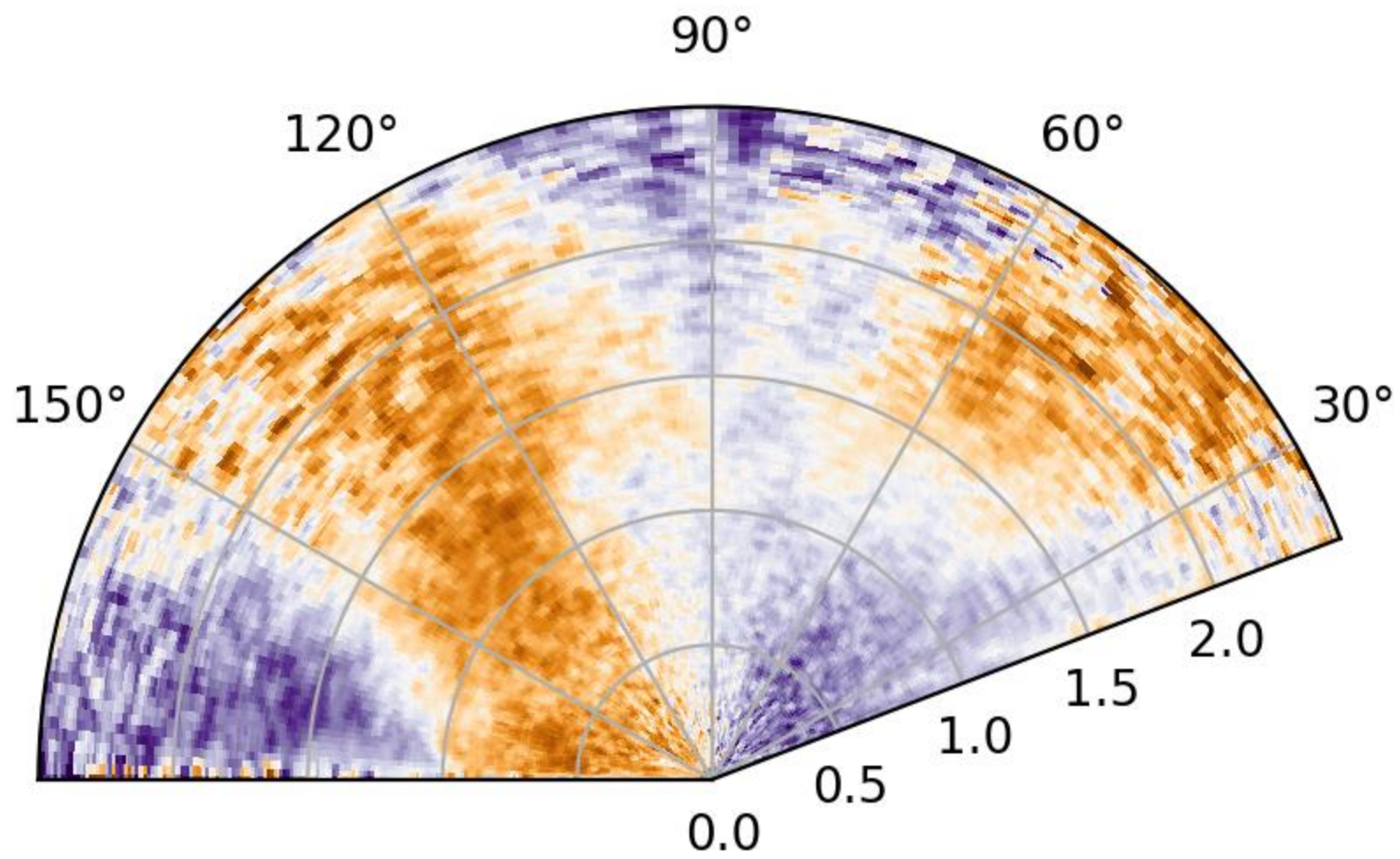
- iMet Instruments (pressure, RH, Temp) on 3 Gliders





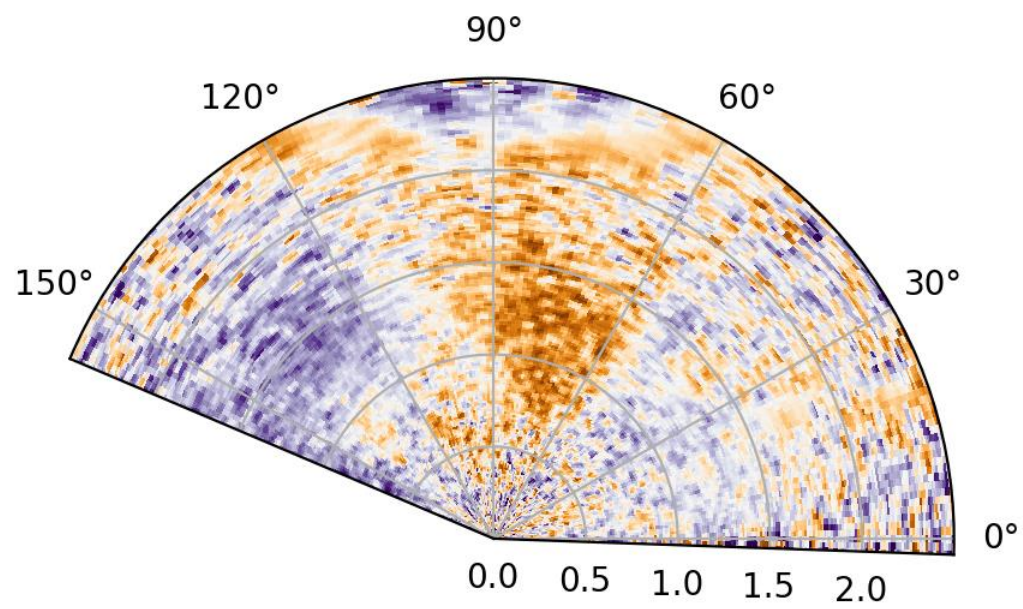




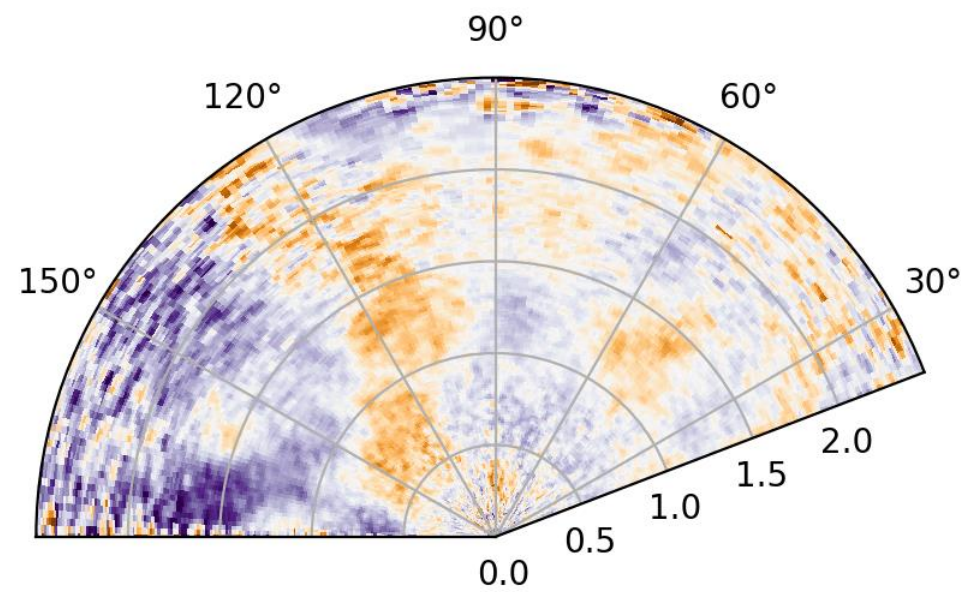




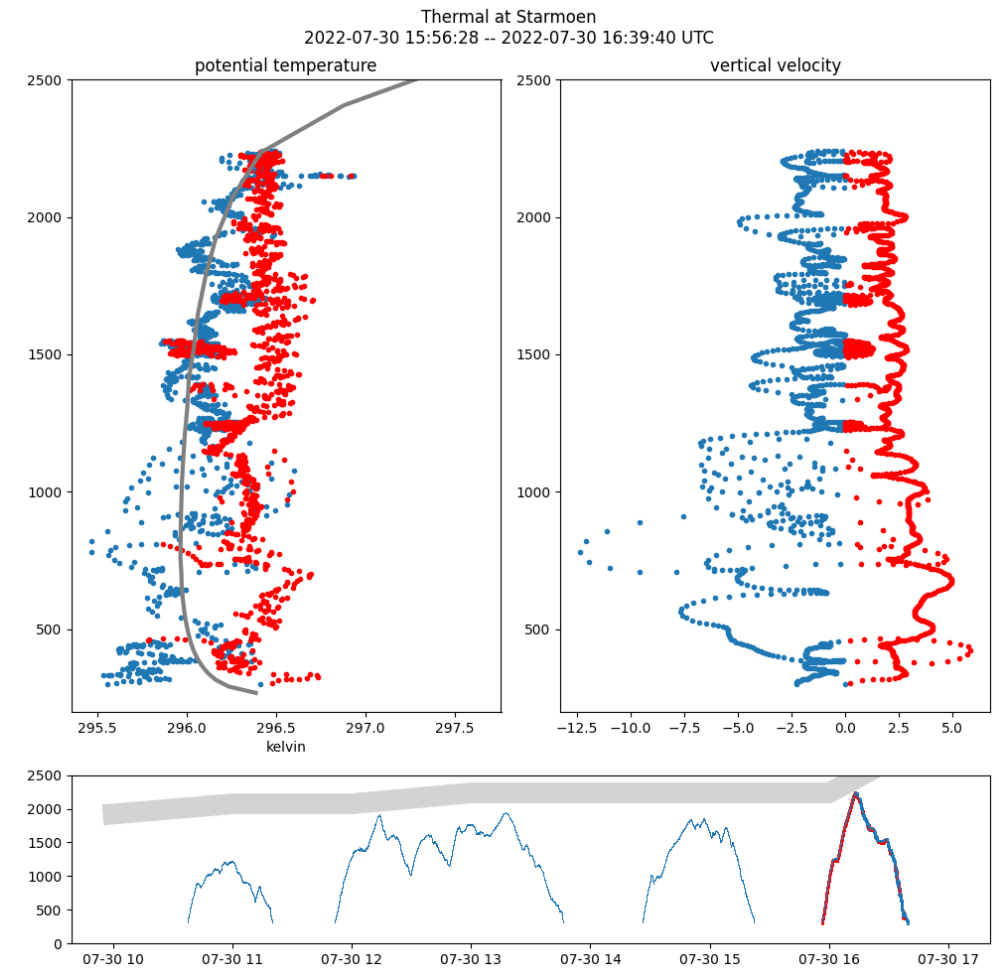
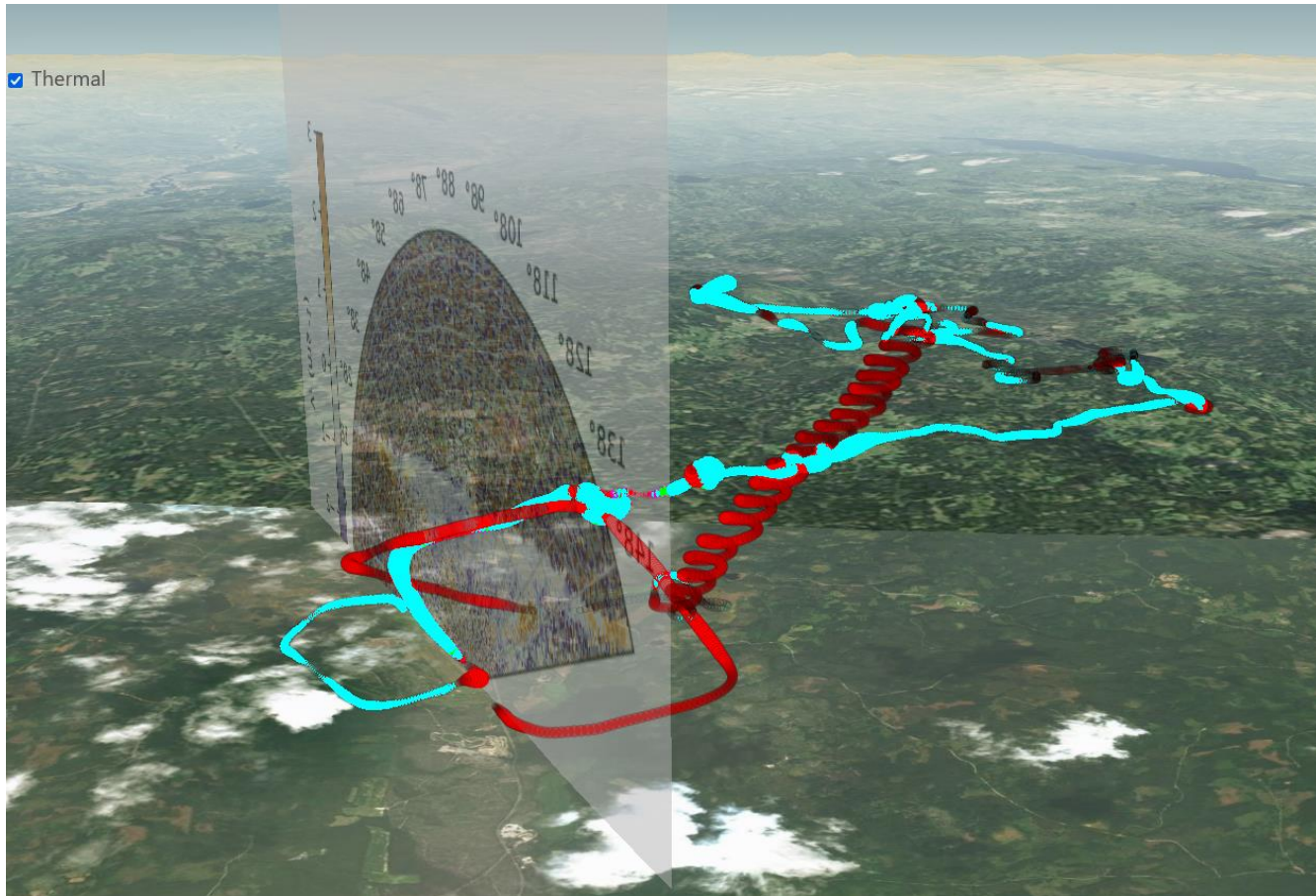
wls34:2022-07-29 14:29:00



wls37:2022-07-29 14:29:00





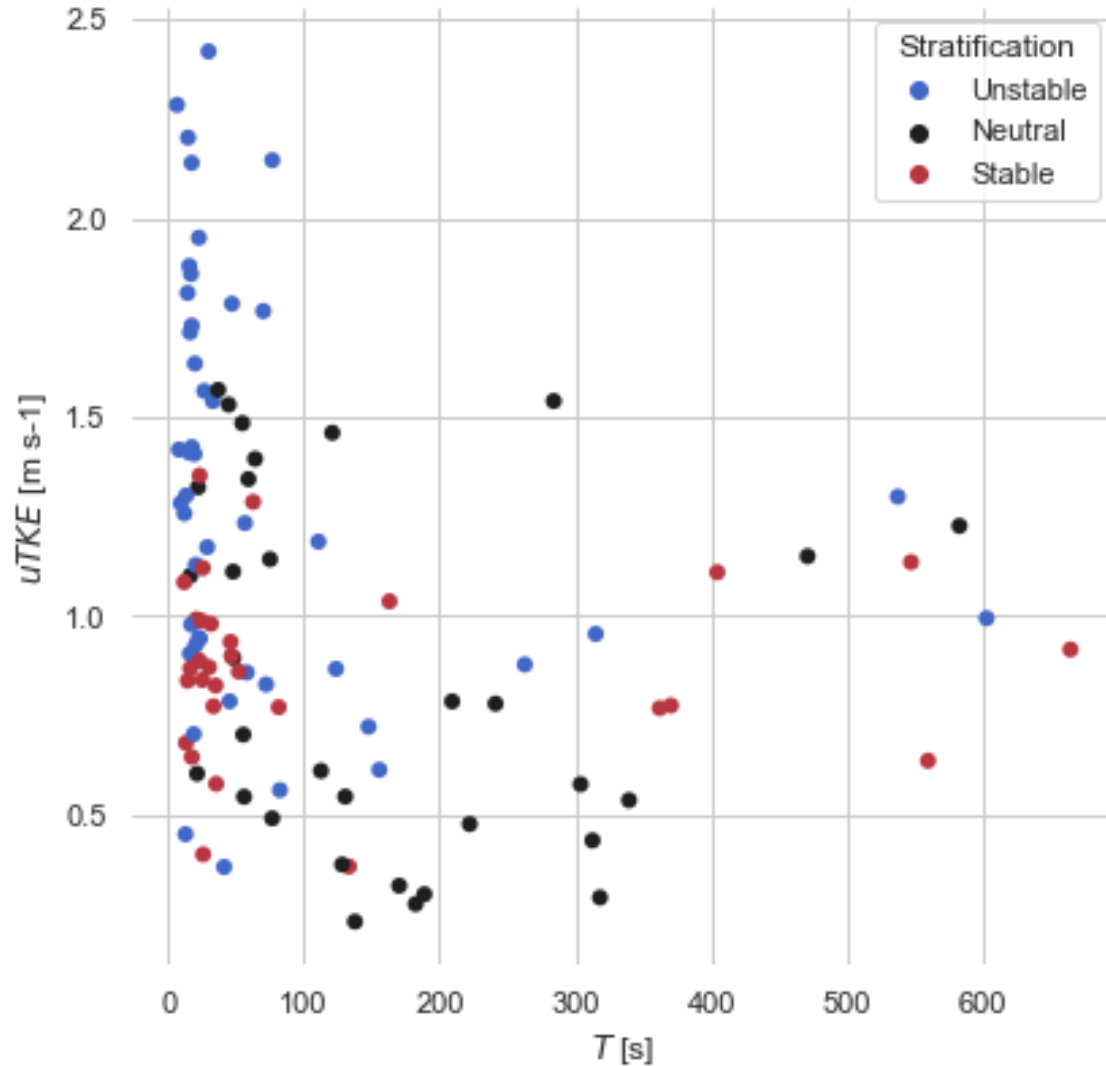




# Statistical Turbulence Techniques

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# Integral Turbulent Time Scale with the Autocorrelation Function

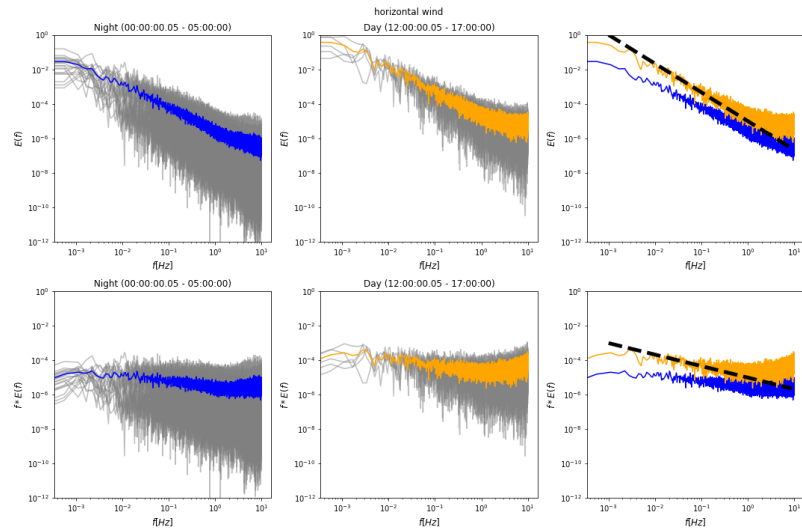
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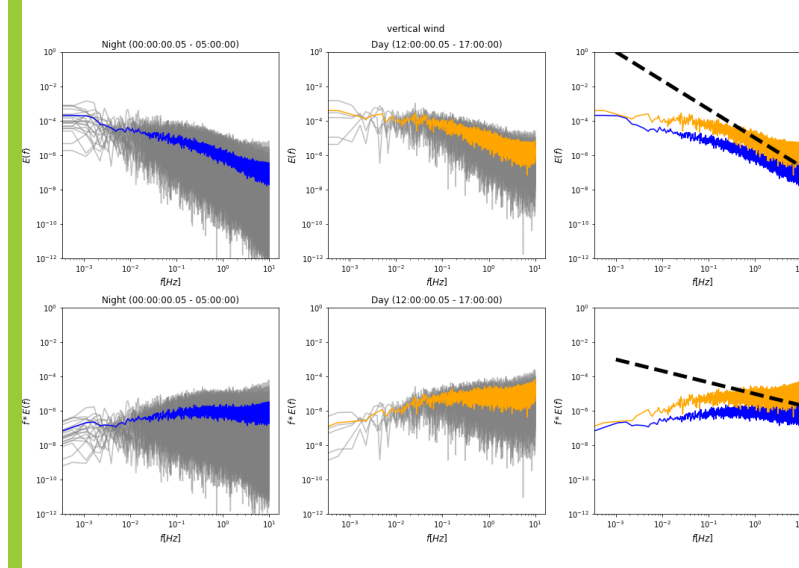
# Fourier Spectra

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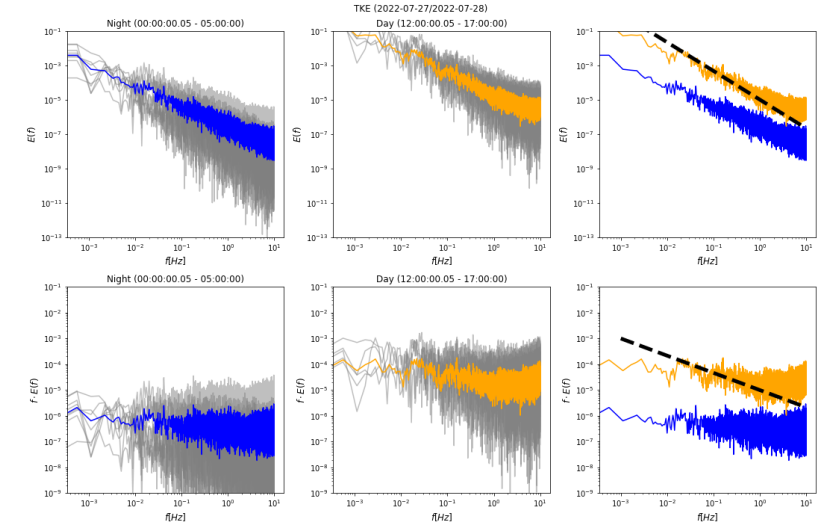
*UX*



*UZ*



*TKE*



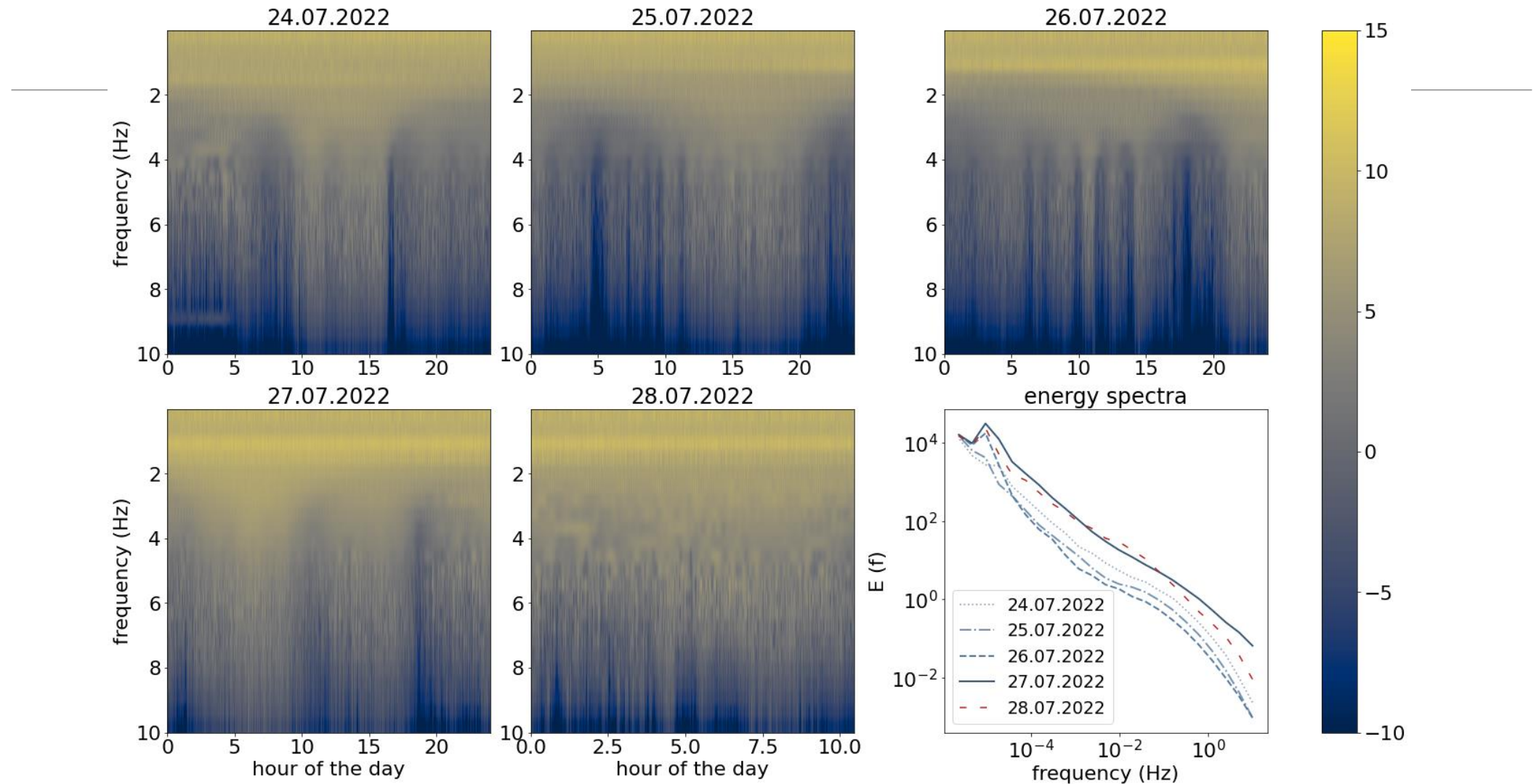
# Spectral Analysis



# Wavelet Analysis

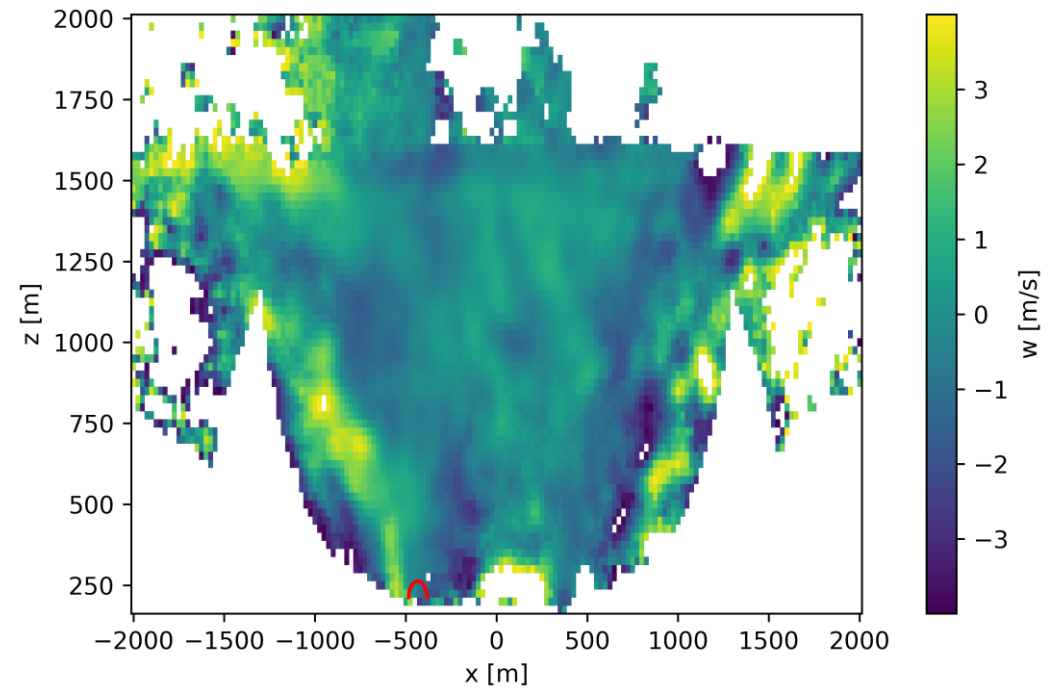
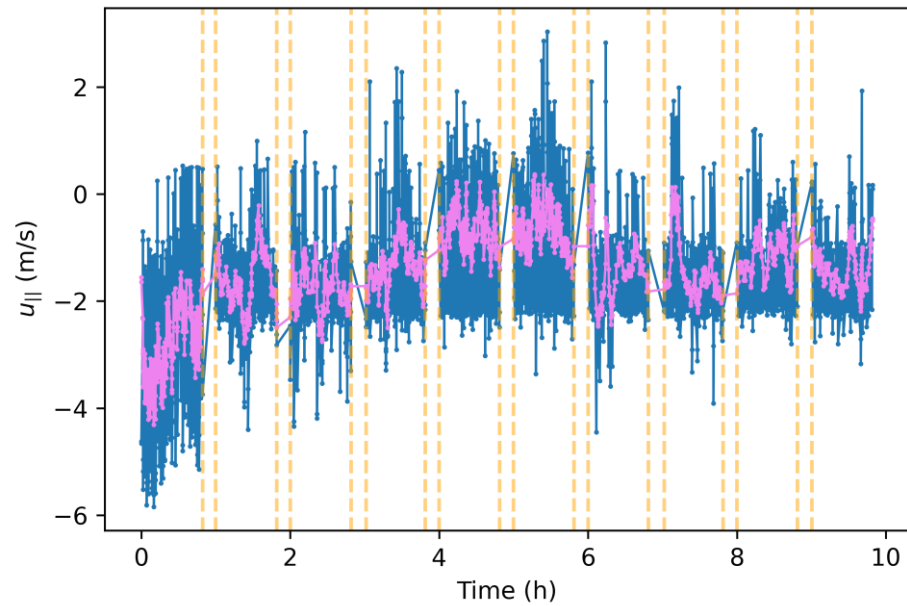
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# Complex Morlet Wavelet: $\overline{w'T'}$

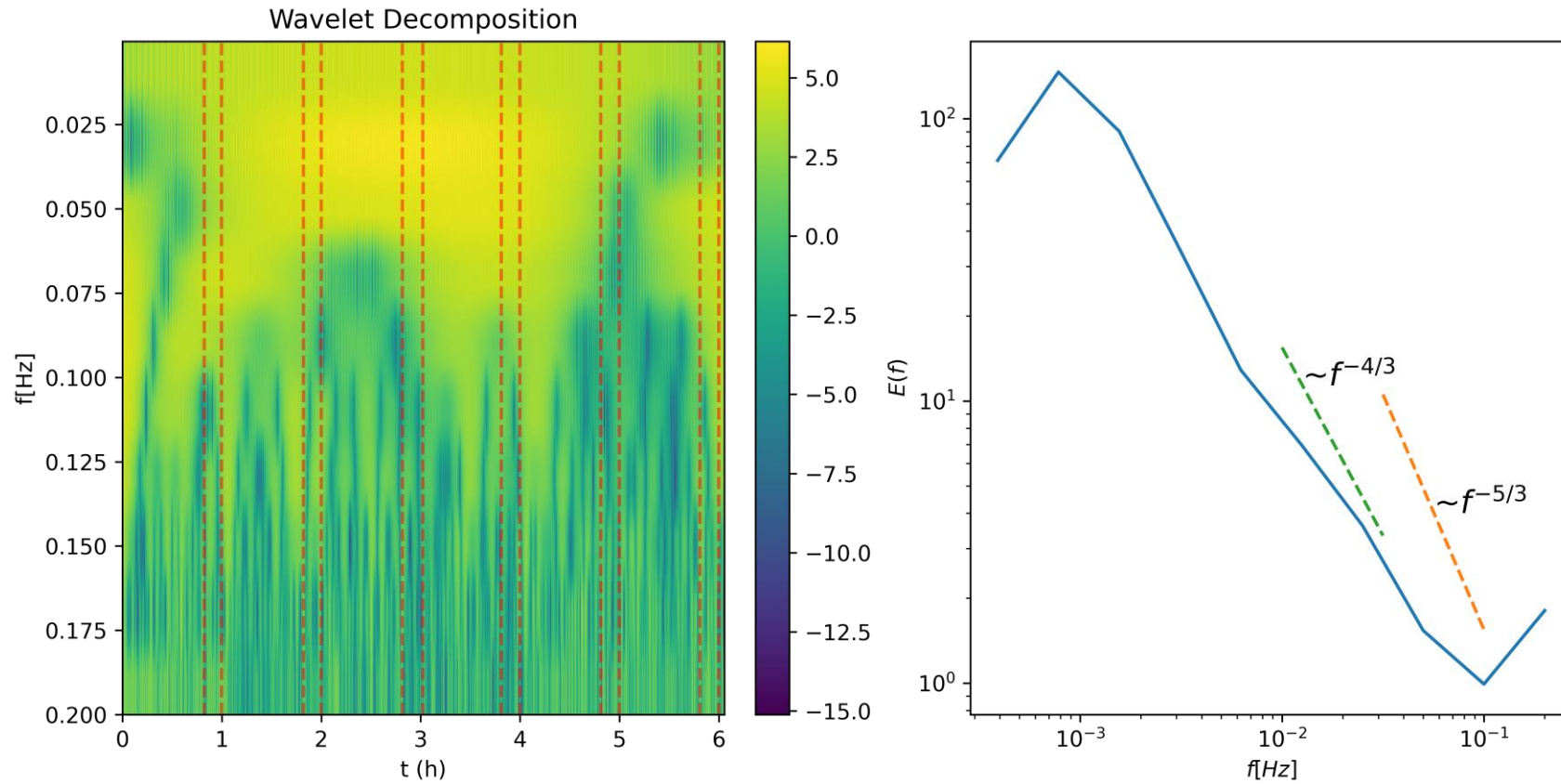




# Time Series Data

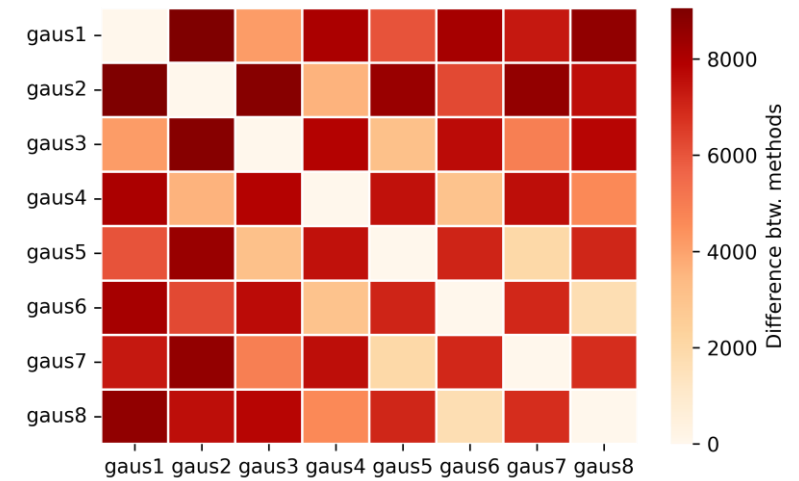
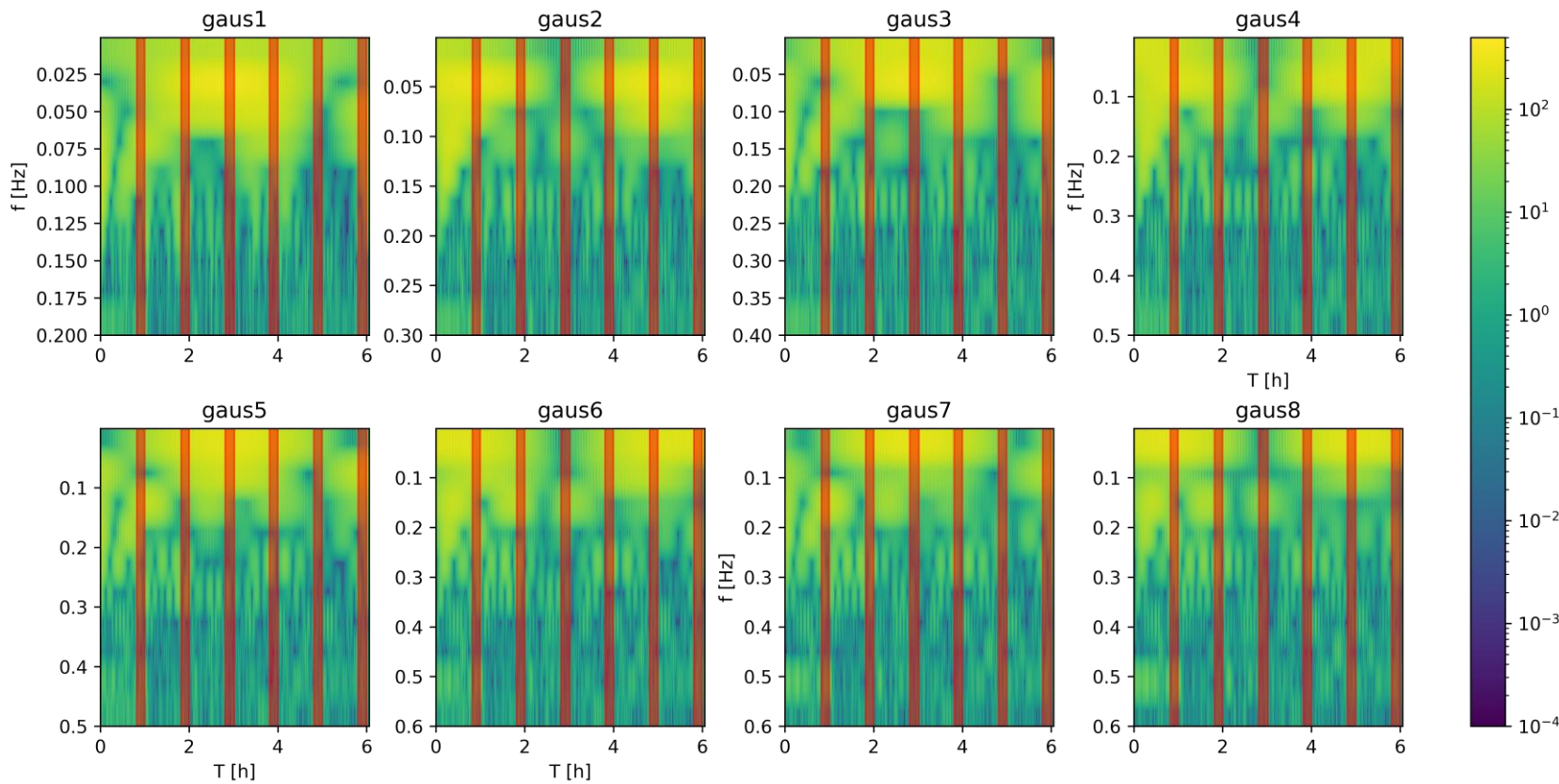
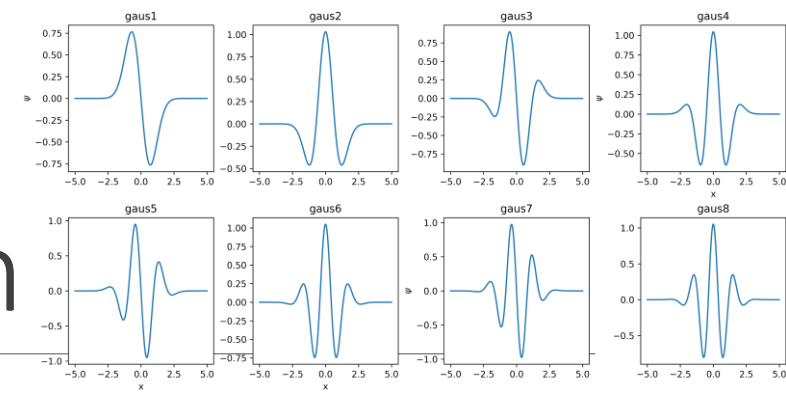


# Gaus1 Wavelet

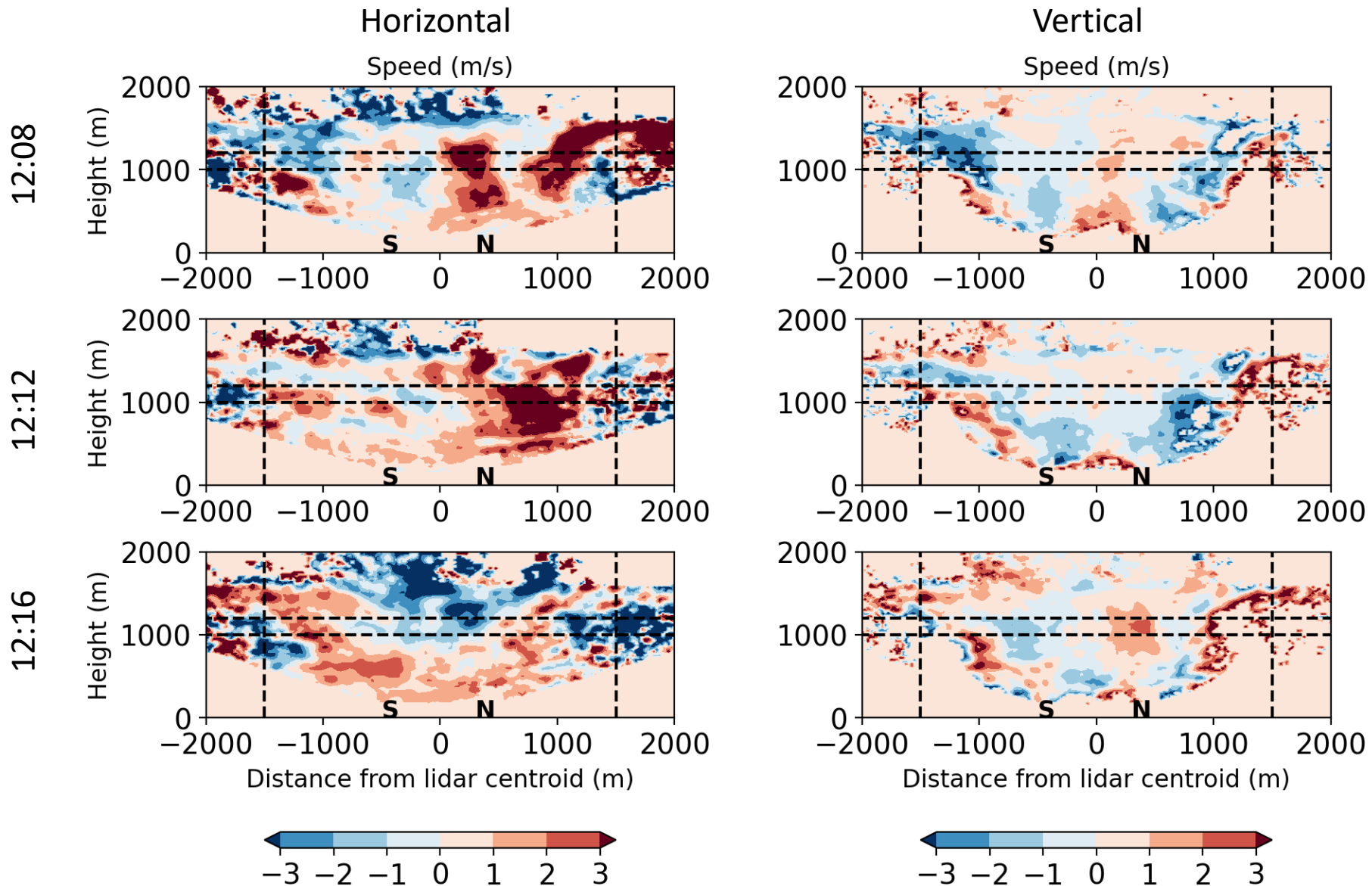




# Gaussian Wavelet Comparison

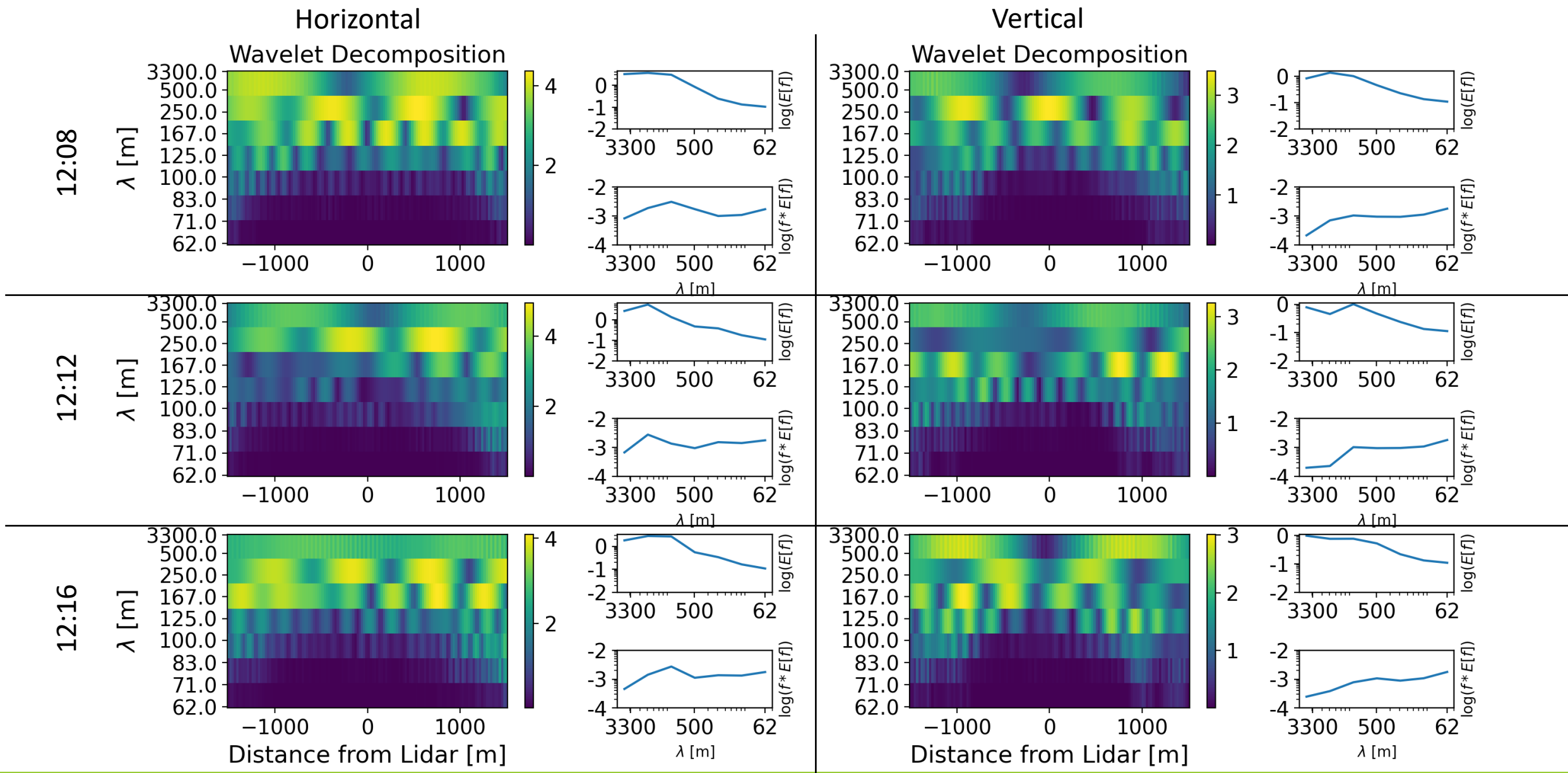


We analyzed the dual lidar retrievals of horizontal and vertical velocity on July 23, 2022 between 1208 UTC and 1216 UTC





# Scale decomposition using Morlet wavelet shows collocated features at wavelengths longer than 250 m

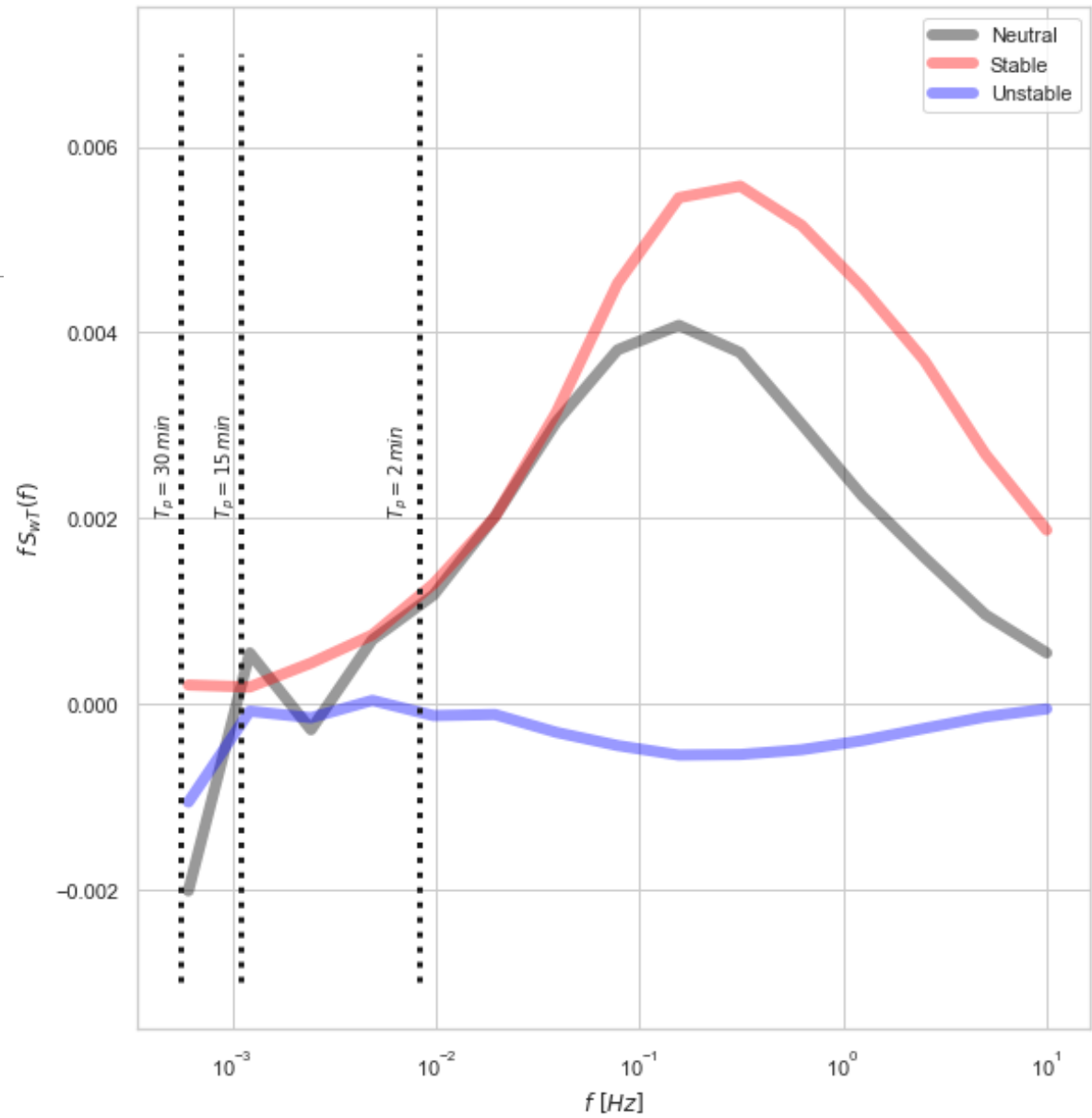


# Multiresuloution Decompsistion

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# $\overline{w'T'}$ Cospectra



# Proper Orthogonal Decomposition

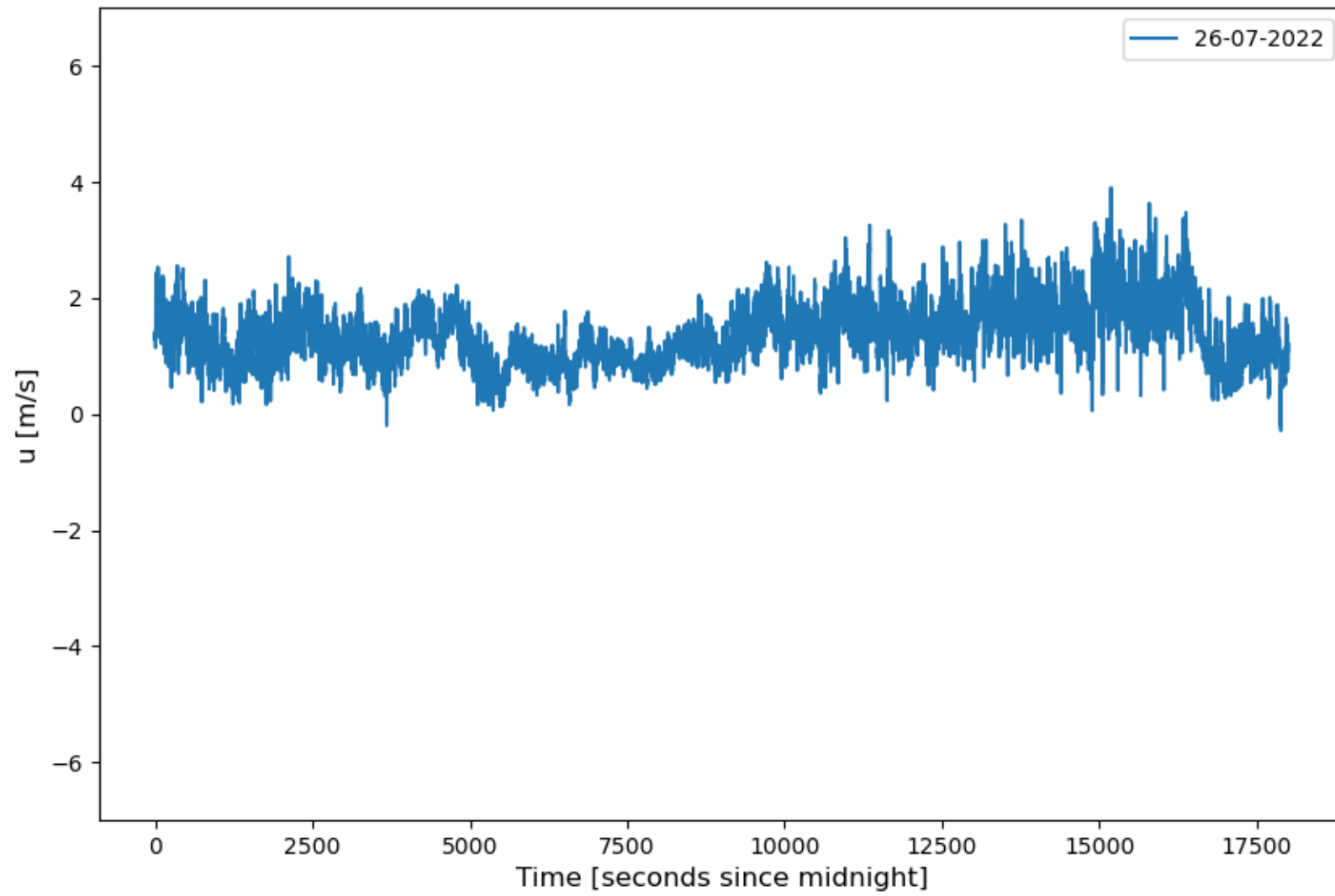
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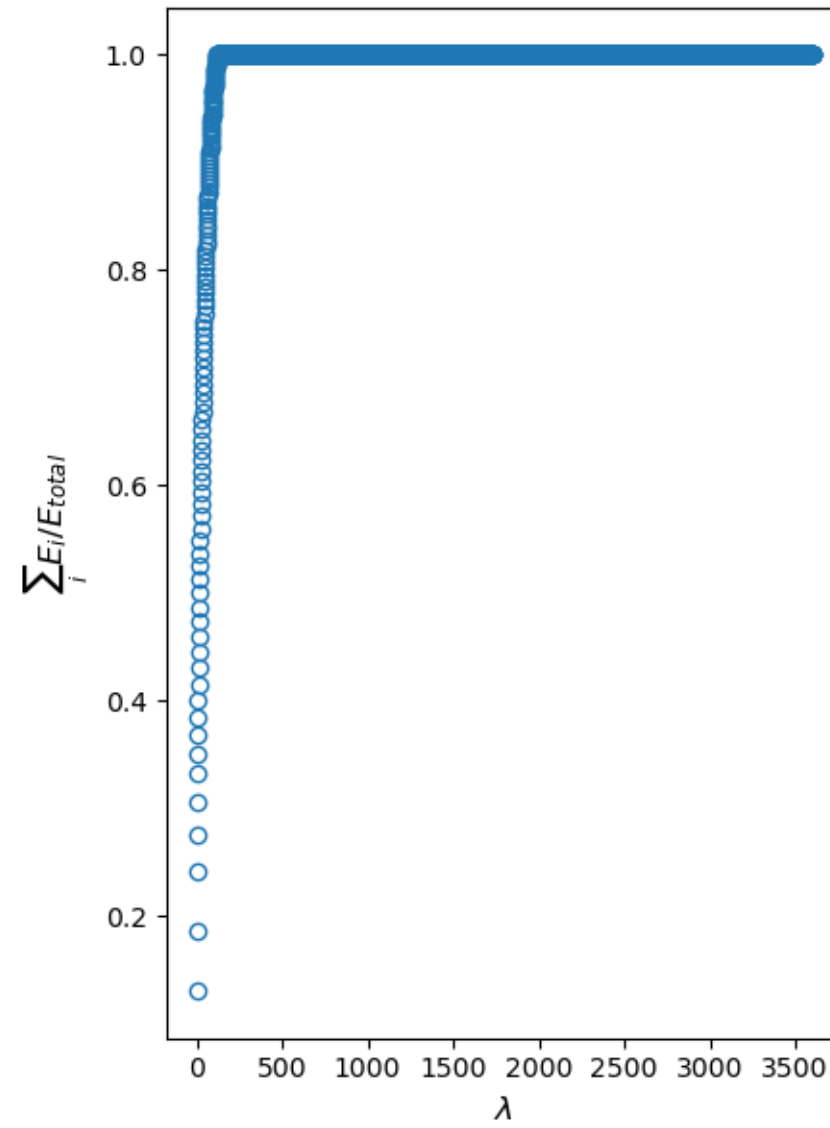
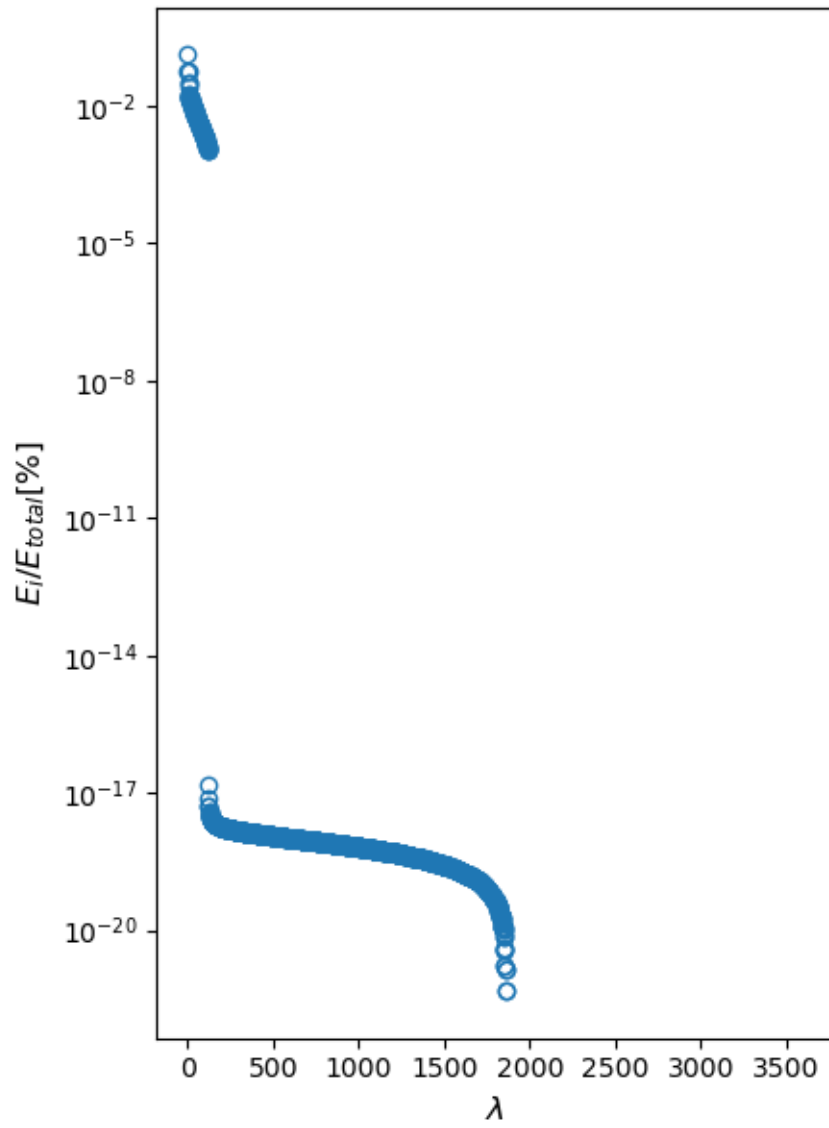
# To POD or not to POD?

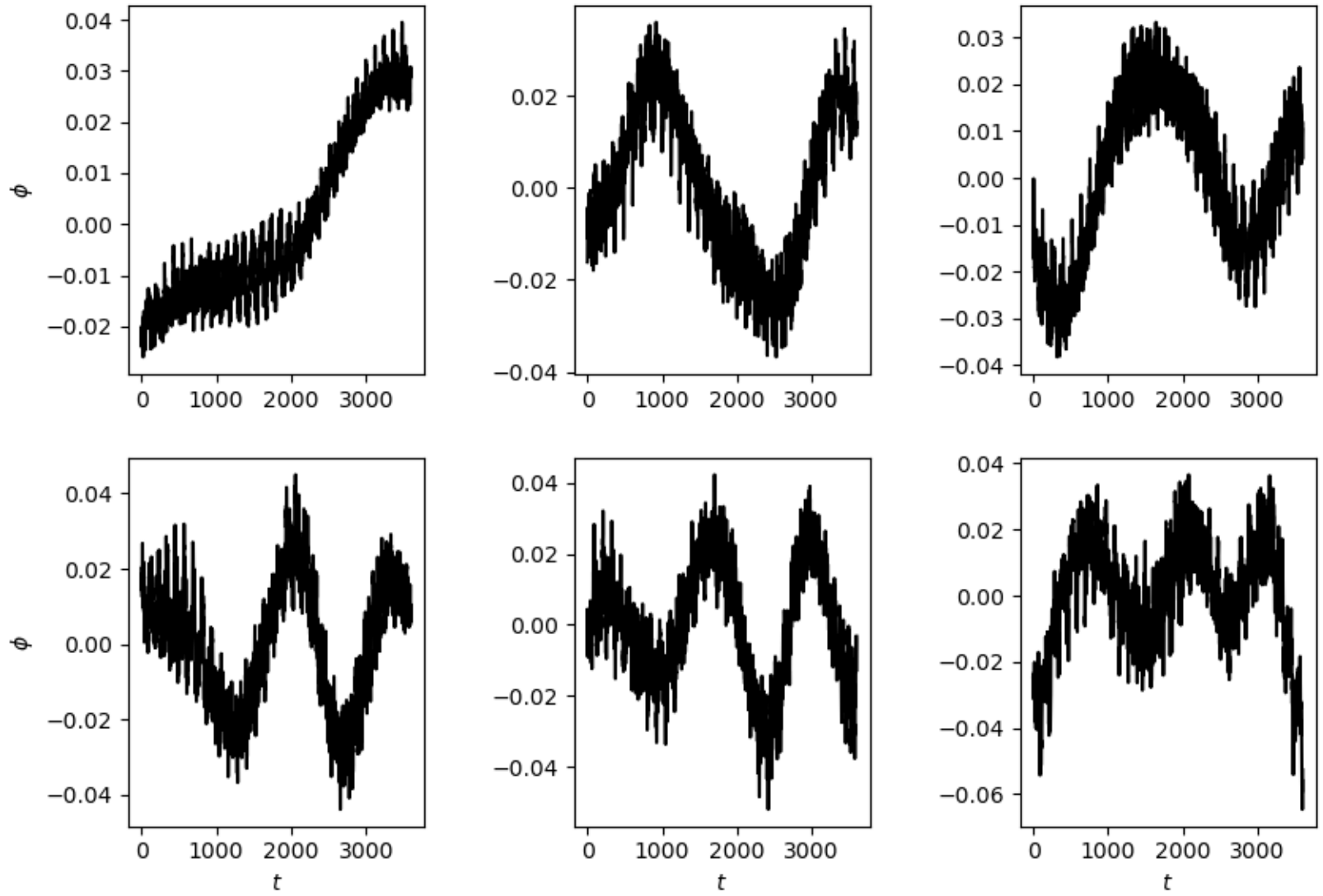
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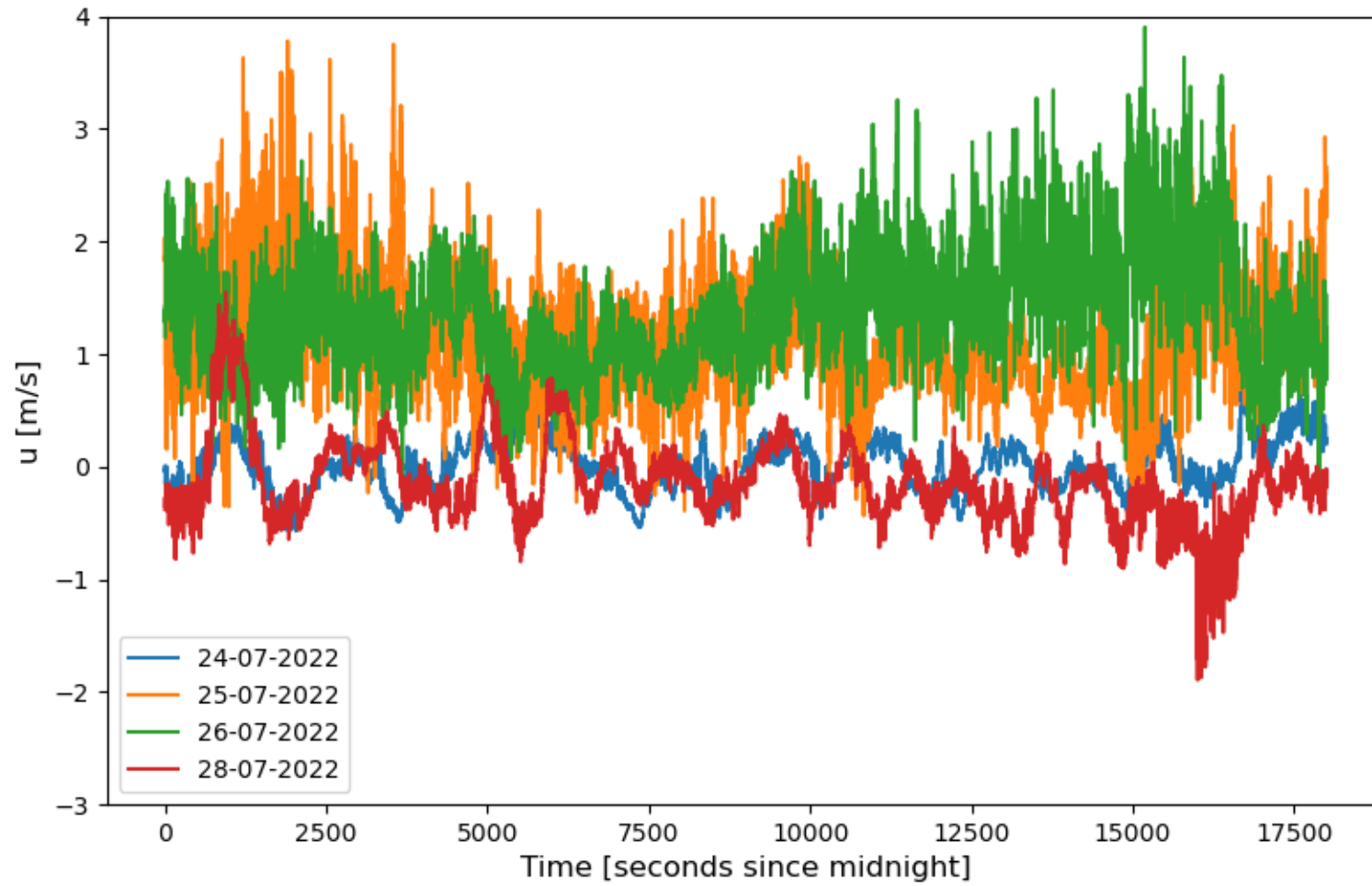
PROPER ORTHOGONAL DECOMPOSITION OF NIGHT TIME WIND



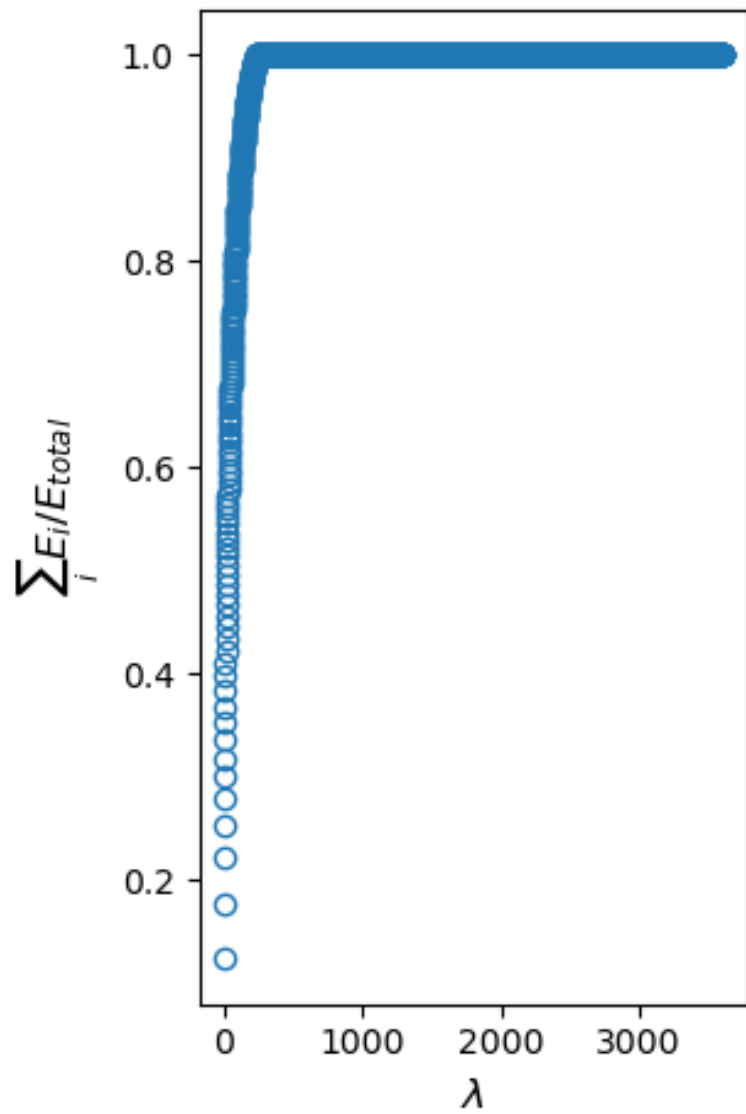
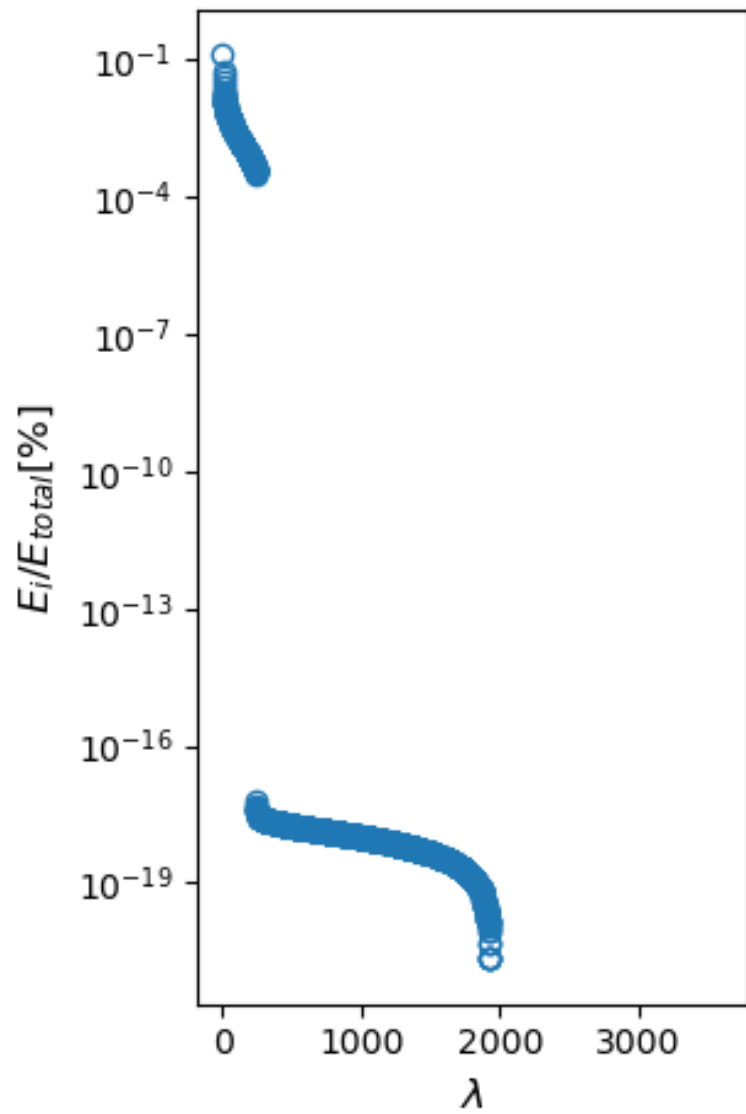


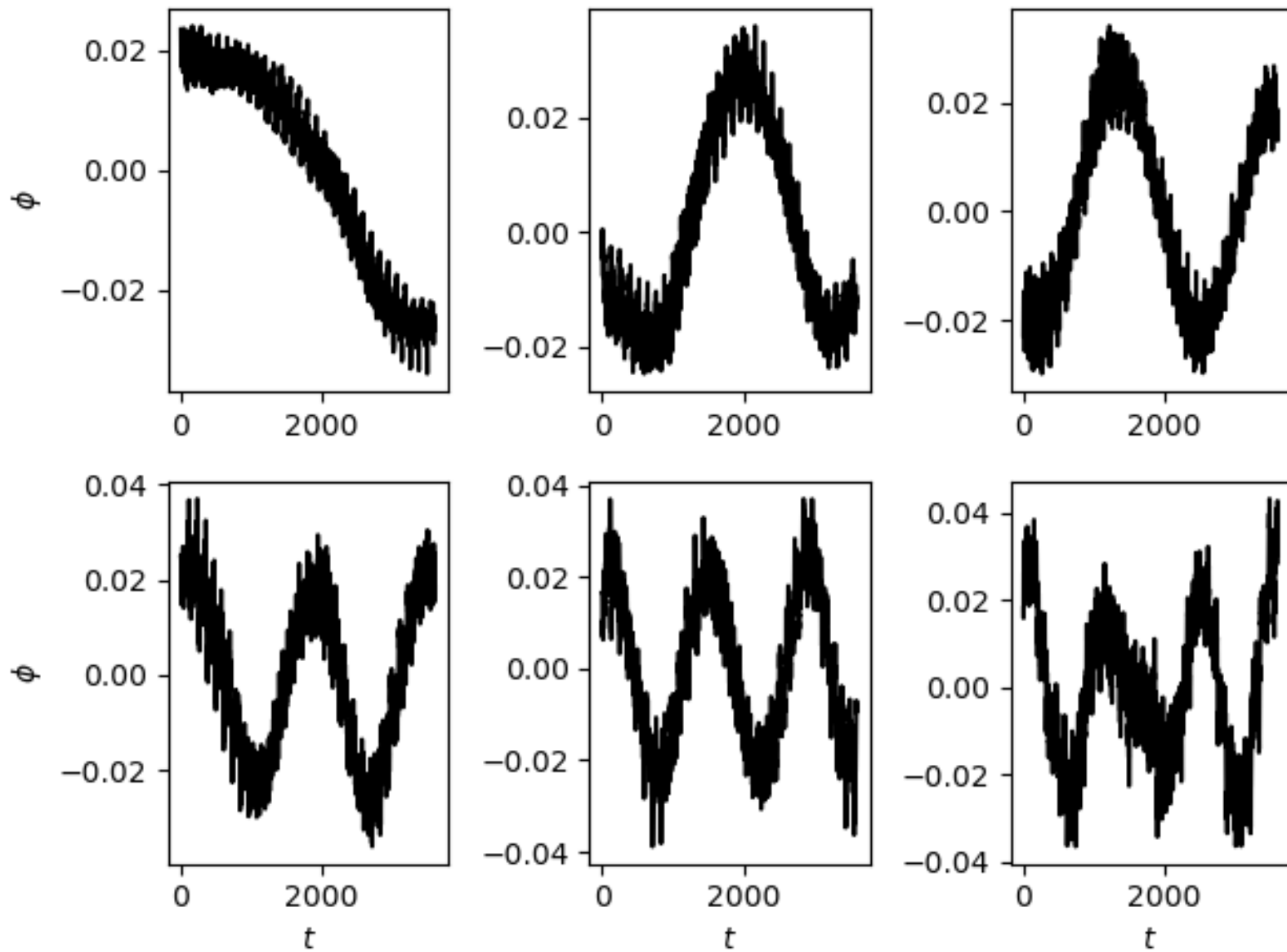


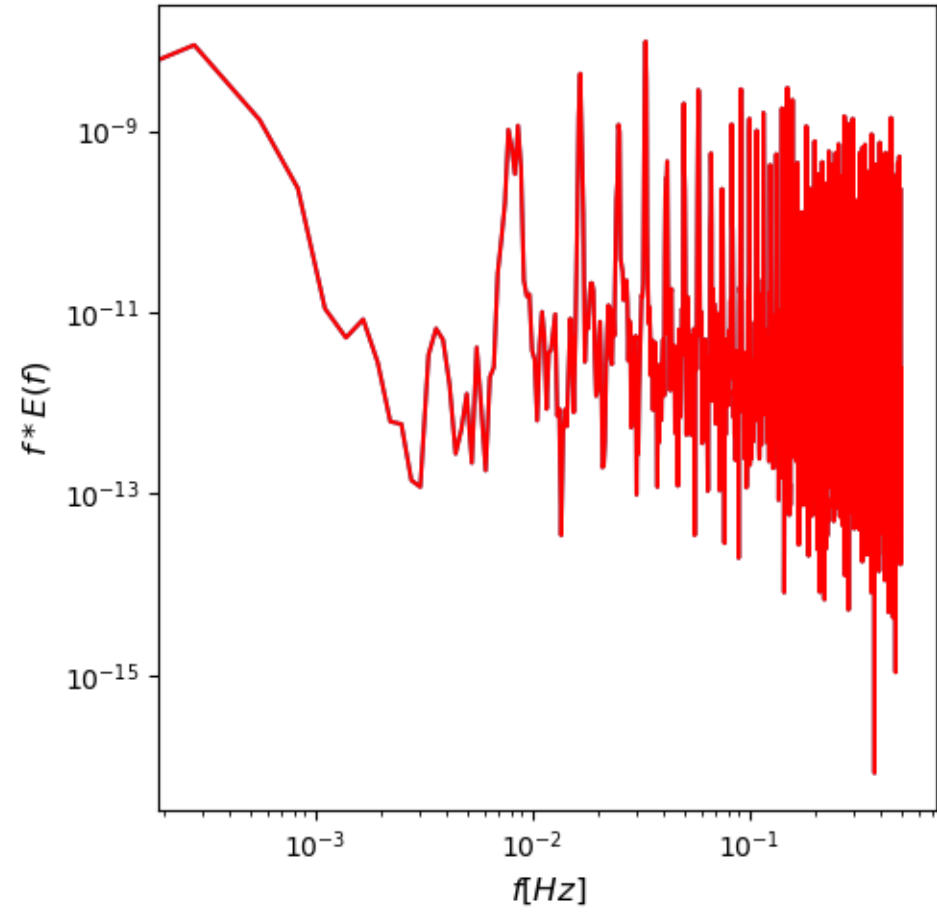
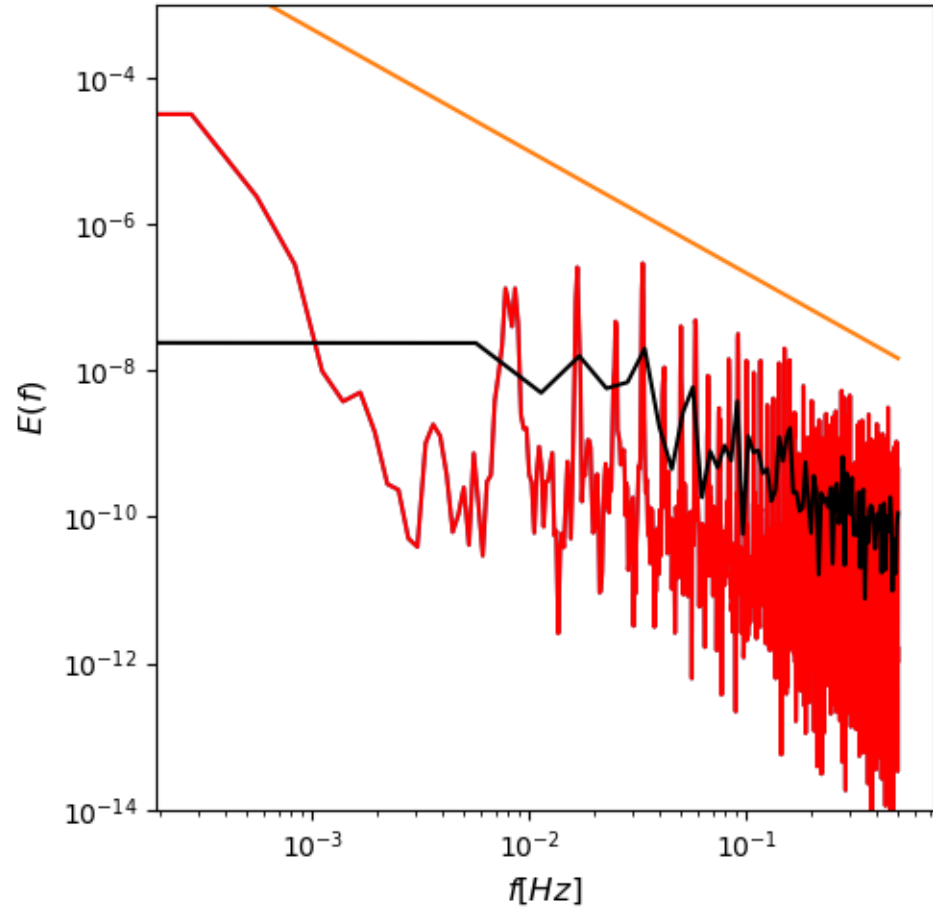
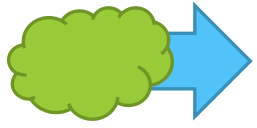




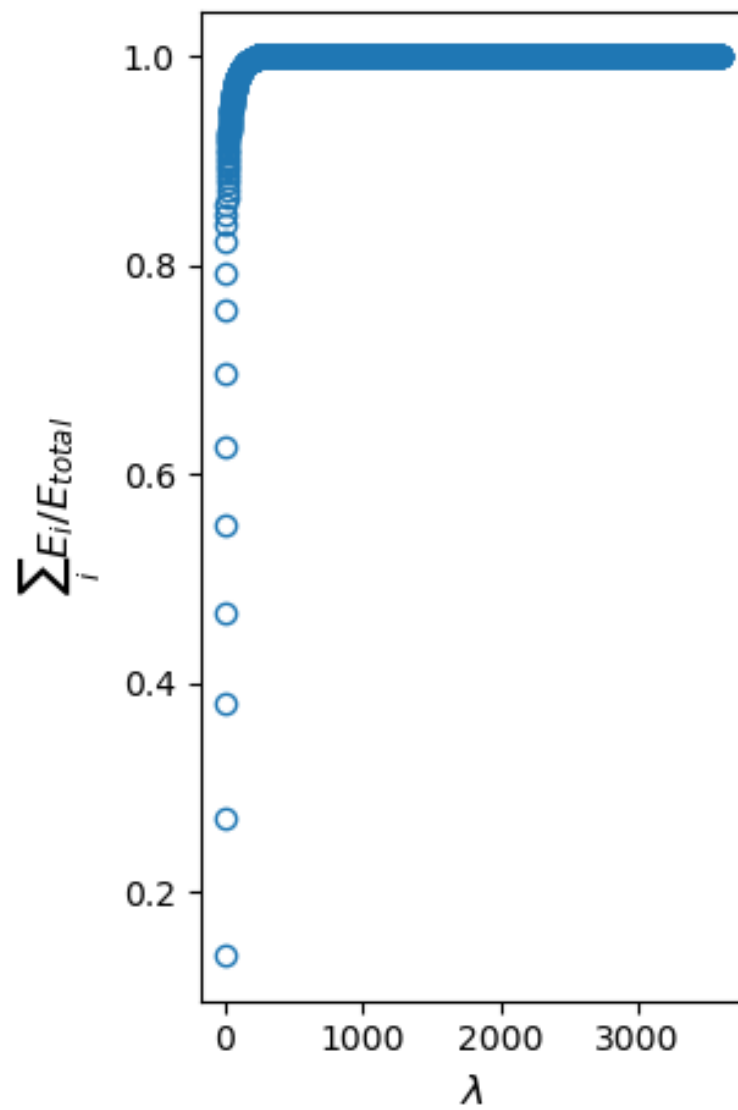
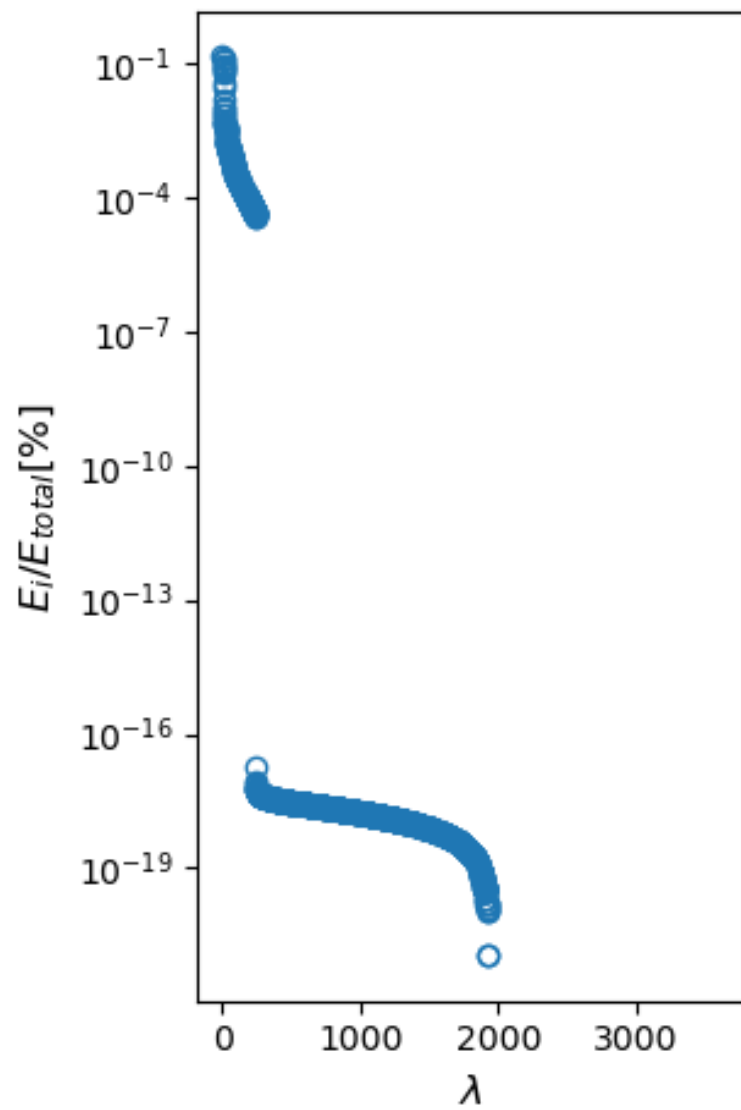


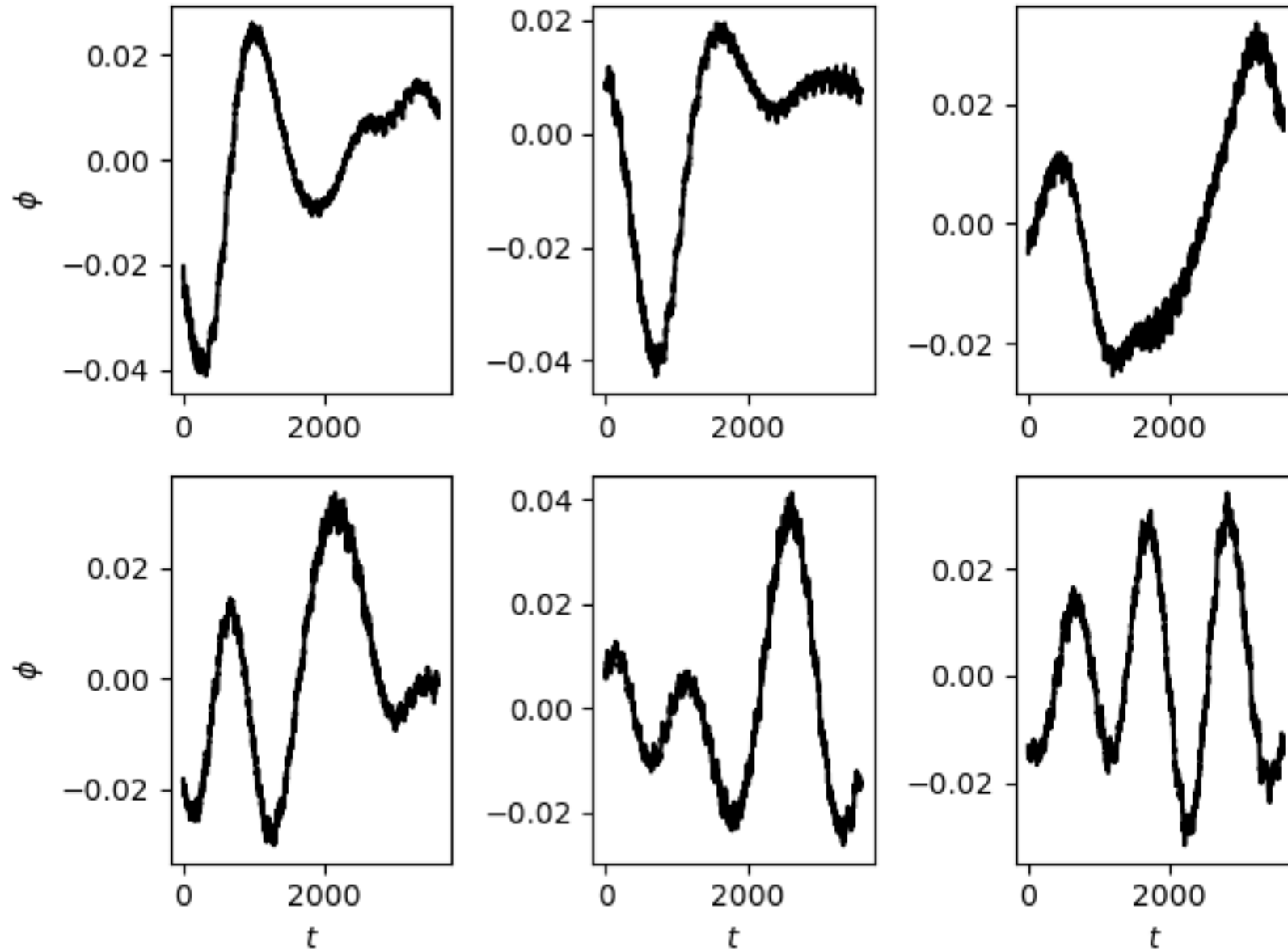


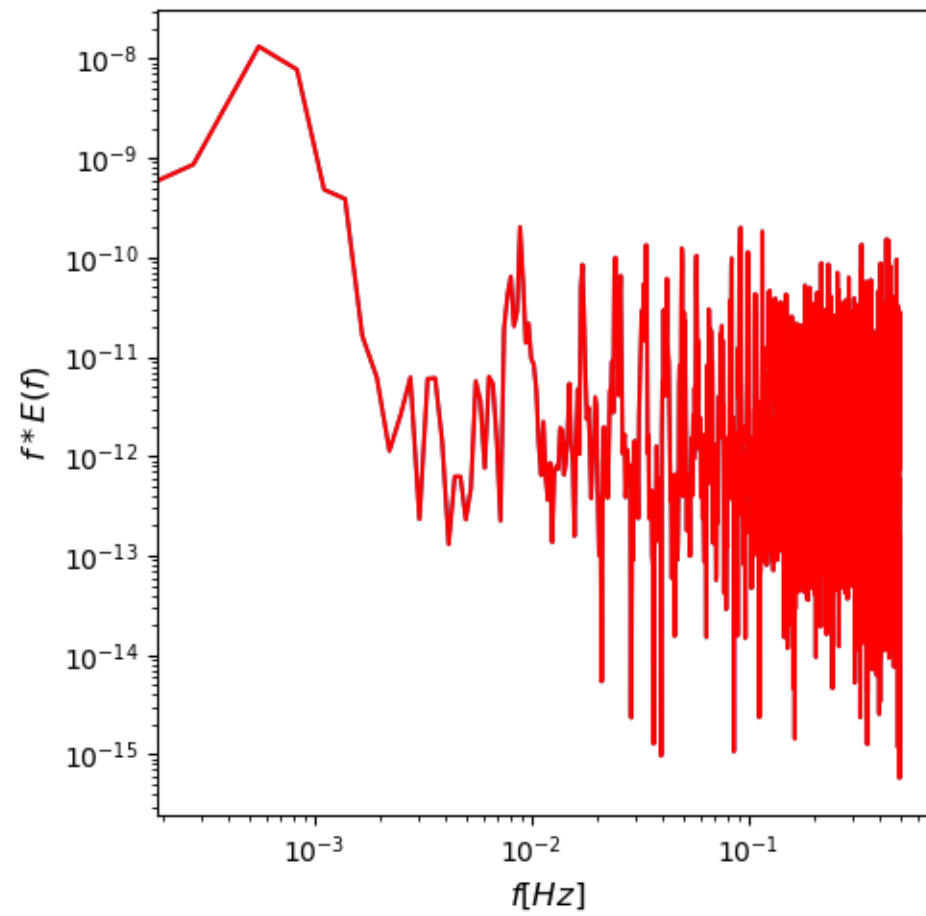
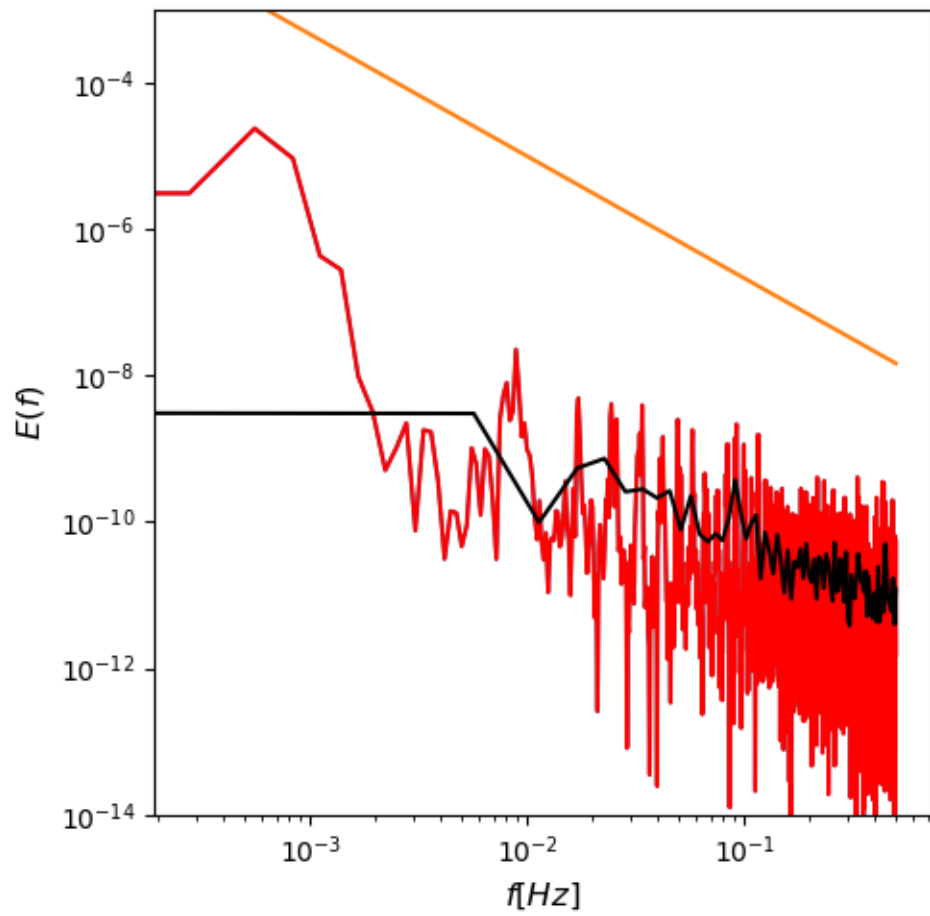














# To POD or not to POD?

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POD is very data hungry

Data needs to be comparable to improve results

POD needs many tries

# Takk for oss!

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