

Stat 565

Frequency Analysis & Harmonic Regression

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Today

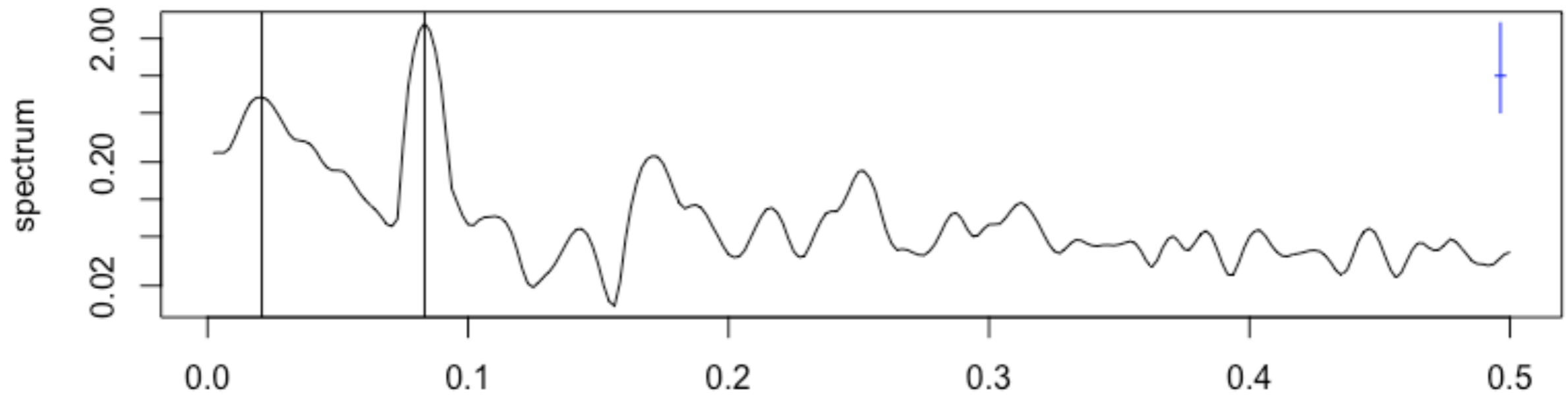
- Practice matching spectra to series
- Another periodogram example
- Harmonic regression
- Project time @11:05am

Your turn

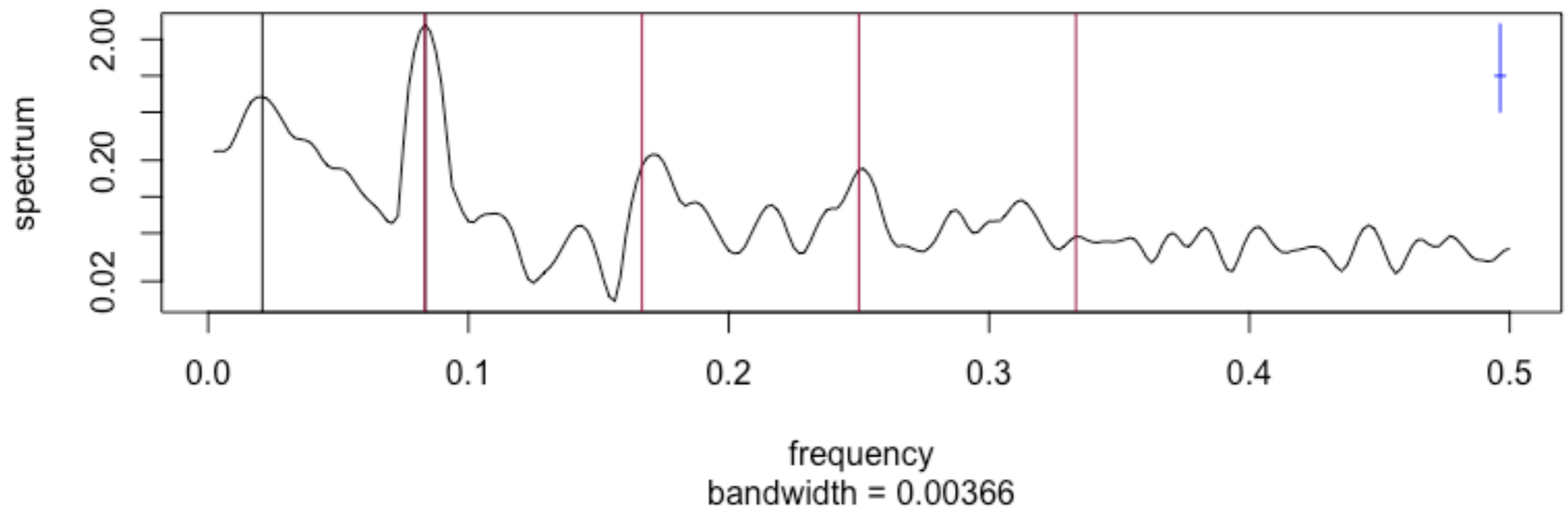
Look down

Handout: Match series to spectra

Series: x
Smoothed Periodogram



Series: x
Smoothed Periodogram



Harmonics

In series with a strong seasonal pattern, the periodogram will have a peak at the seasonal frequency.

Often, in addition, there will be peaks at multiples of the seasonal frequency, these are known as harmonics.

Harmonics occur, when the seasonal pattern isn't exactly sinusoidal.

Harmonic regression

One way to model seasonality.

The explanatories are simply sin and cosine pairs at specified frequencies.

Work through R example.