Activity 18: Periodogram example

Started: Mar 31 at 10:45am

Quiz Instructions

Complete the worksheet **periodogramexample.pdf** ↓
(https://canvas.ubc.ca/courses/86274/files/18704412/download?download_frd=1) and answer the following questions.

Question 1	1 pts

(On Problem 1 on the worksheet) How many cycles would you say were completed over the eight-hour time period?

> 6

Question 2	2 pts

(On Problem 2 on the worksheet)

a) Which (model) frequency has the largest contribution to the spectrum?

Enter a decimal with 3 decimal places: 0.125

b) What is the wavelength (in minutes) of this frequency?

Enter an integer: 80

Question 3	1 pts

(On Problem 3 on the worksheet) Are the data consistent with a series having a frequency component that is exactly sinusoidal?

○ Yes

○ No

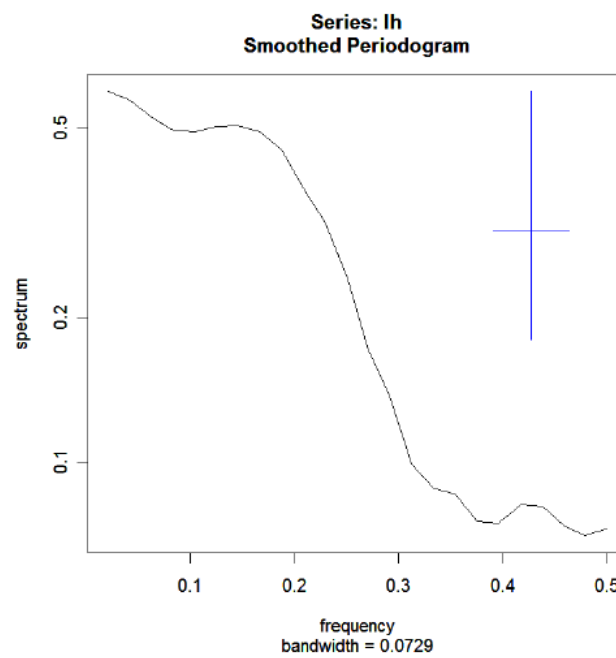
Question 4   3 pts

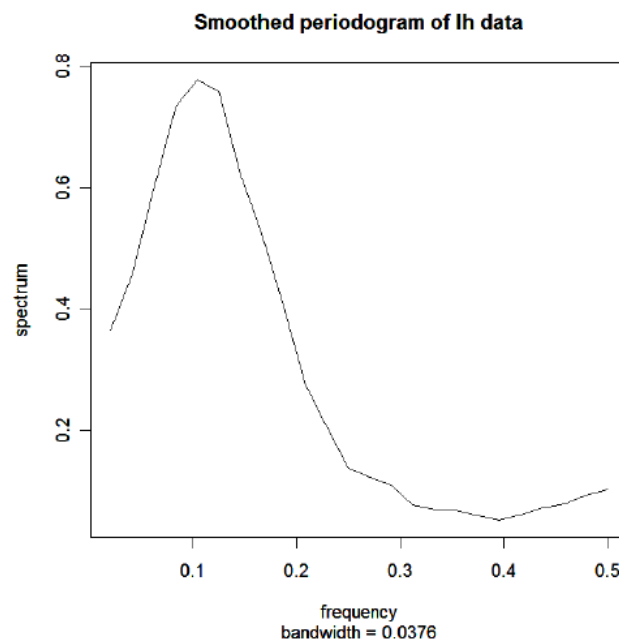(On Problem 4 on the worksheet) Which of the following do you think is the better smoothed periodogram?
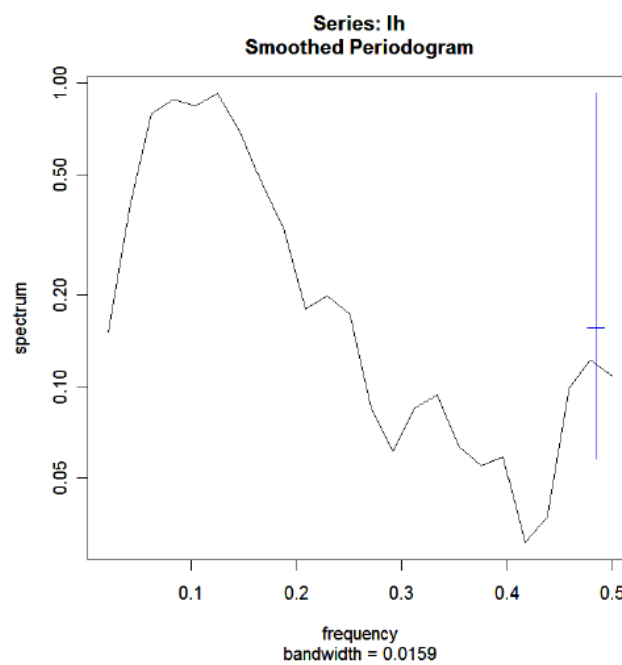
Plot (a)

(a) speclh <- spec.pgram(lh, spans=12)

Series: lh
Smoothed Periodogram

spectrum

0.1   0.2   0.3   0.4   0.5
frequency
bandwidth = 0.0729

Plot (b)

(b) speclh <- spec.pgram(lh, spans=6)

Smoothed periodogram of lh data

Plot (c)

(c) speclh <- spec.pgram(lh, spans=3)

Series: lh
Smoothed Periodogram

Plot (a)	oversmoothed ⬍
Plot (b)	best of the three given ⬍
Plot (c)	~~undersmoothed~~ ⬍

Quiz saved at 10:49am   Submit Quiz