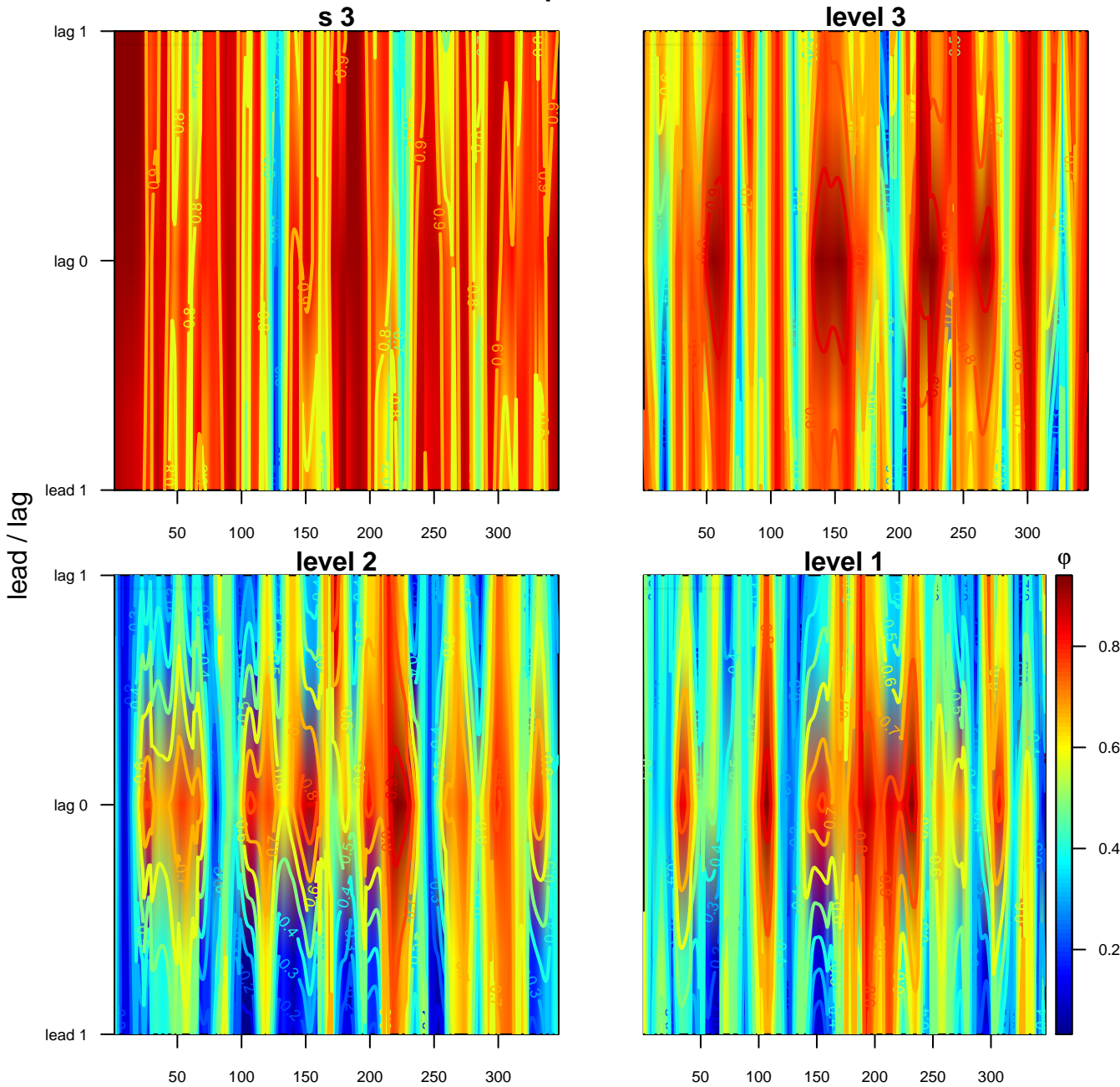


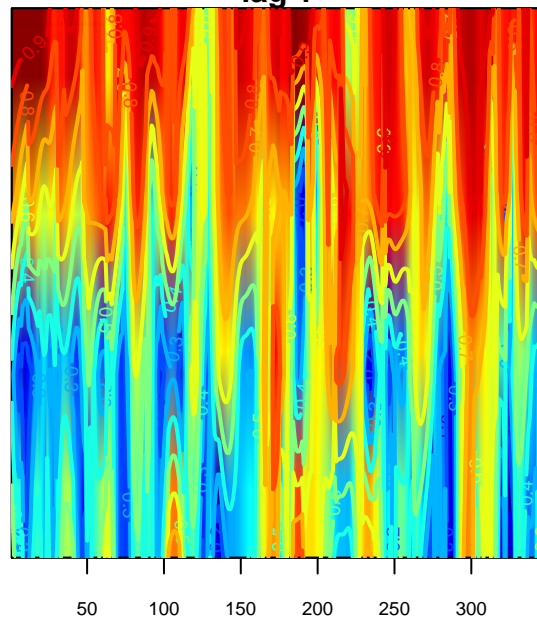
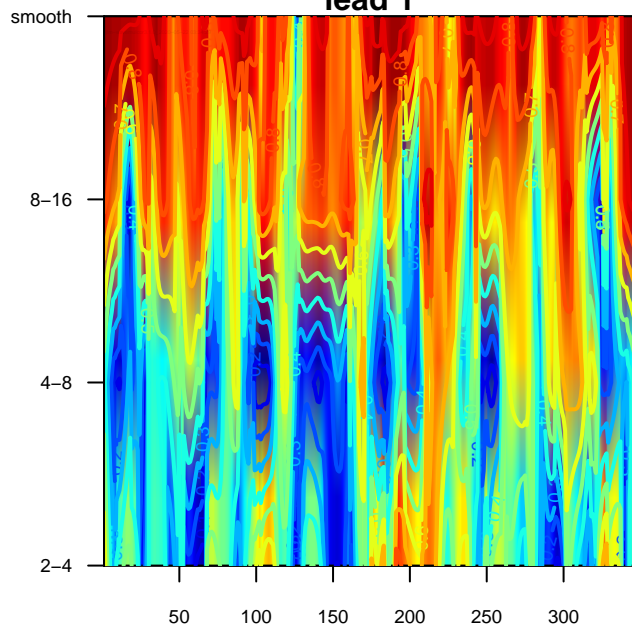
Wavelet Local Multiple Cross-Correlation



Wavelet Local Multiple Cross-Correlation

lead 1

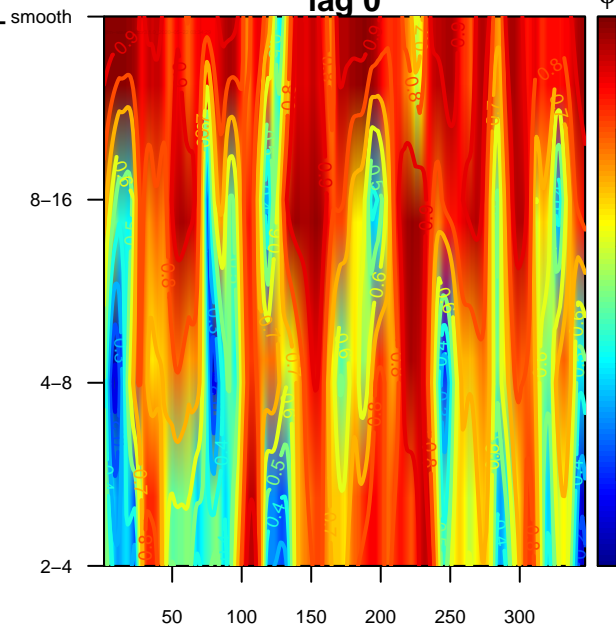
lag 1



lag 0

ϕ

period



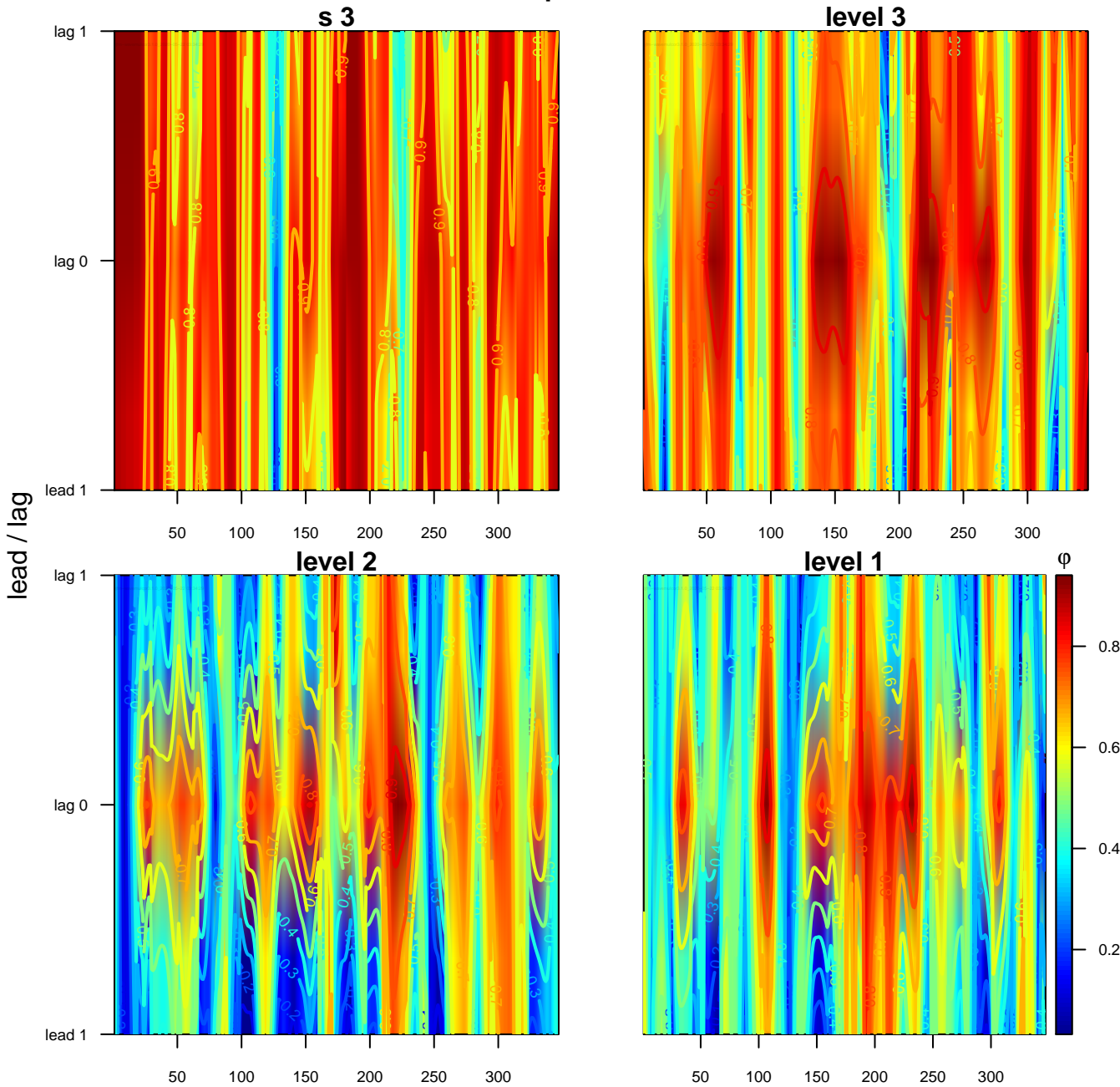
0.8

0.6

0.4

0.2

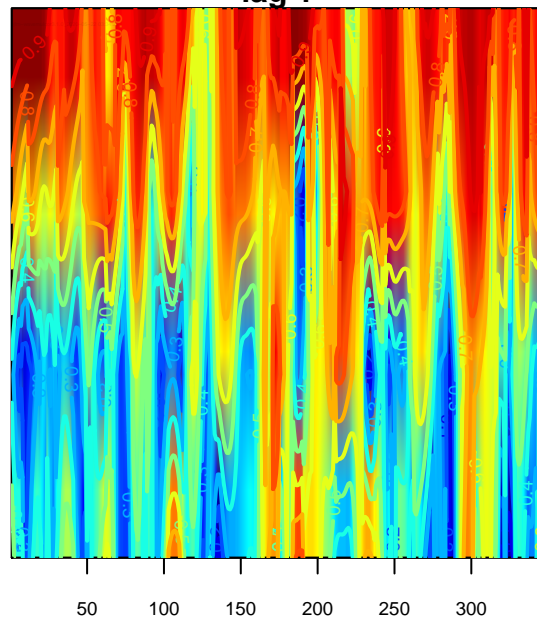
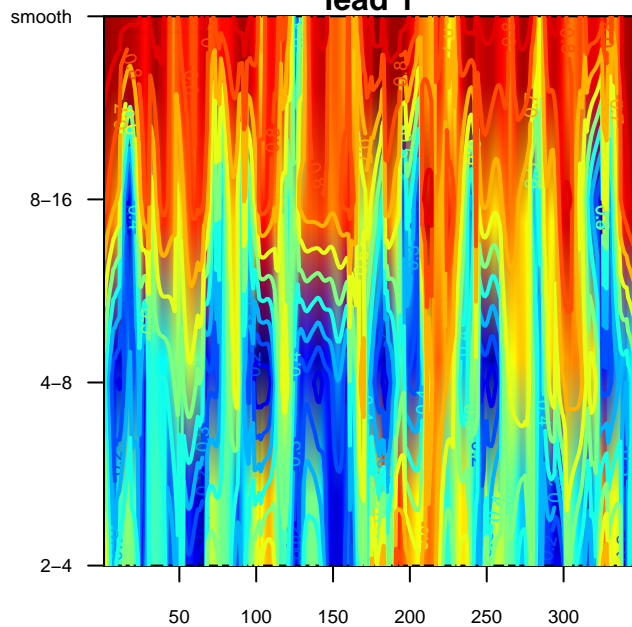
Wavelet Local Multiple Cross-Correlation



Wavelet Local Multiple Cross-Correlation

lead 1

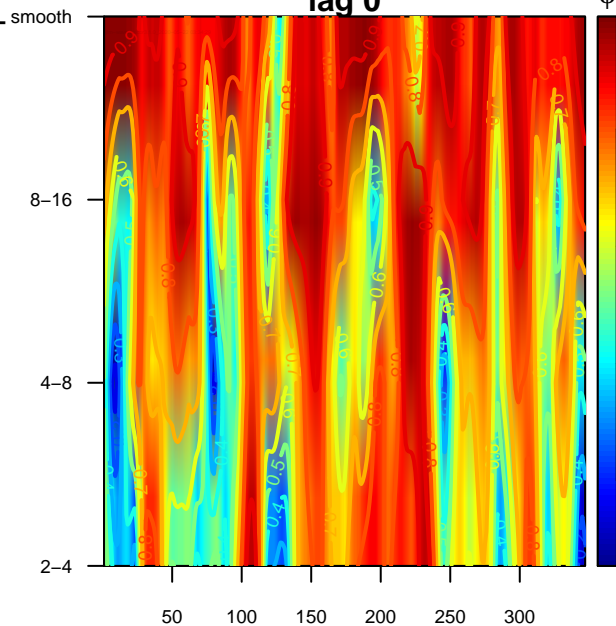
lag 1



lag 0

ϕ

period



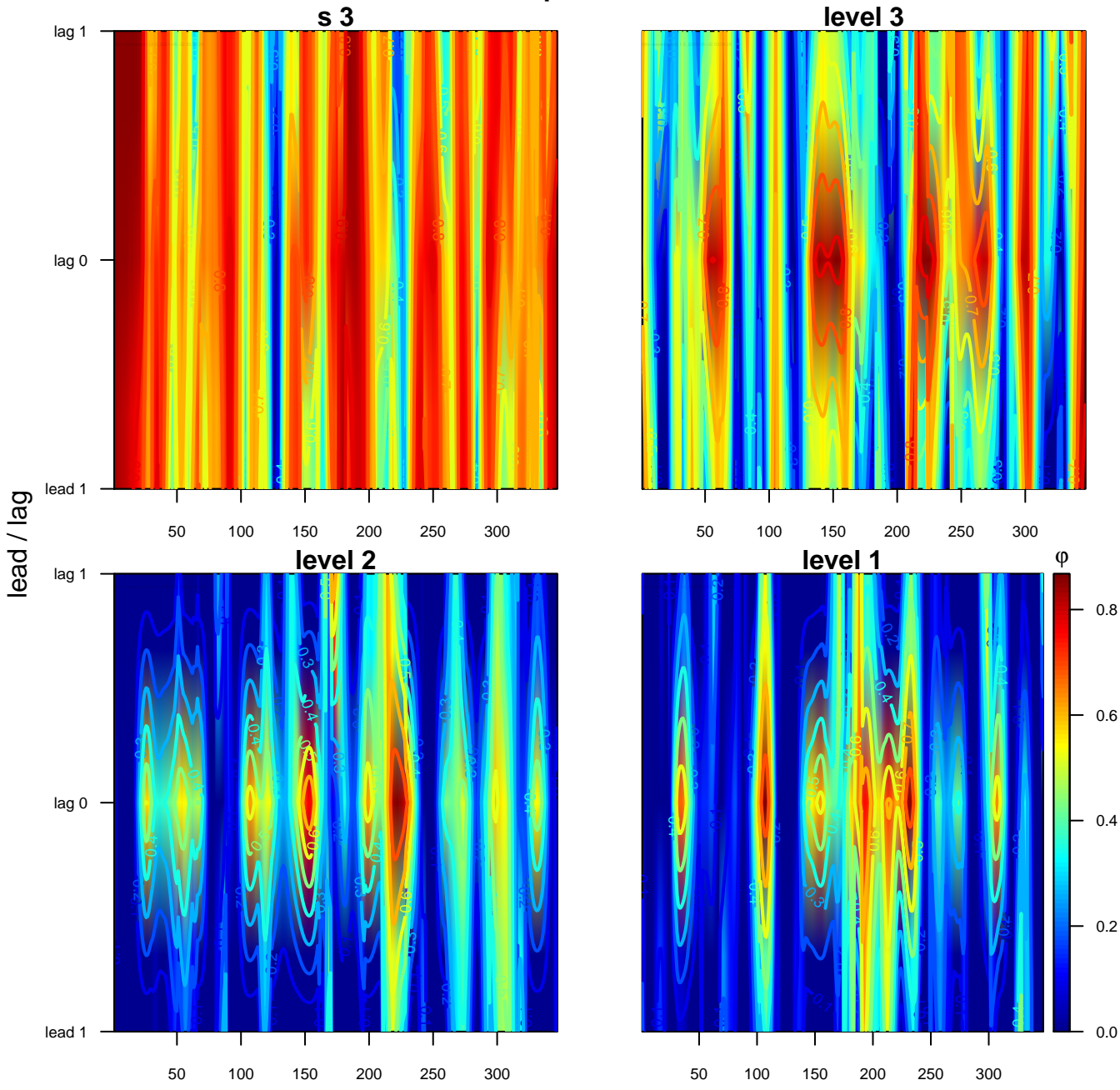
0.8

0.6

0.4

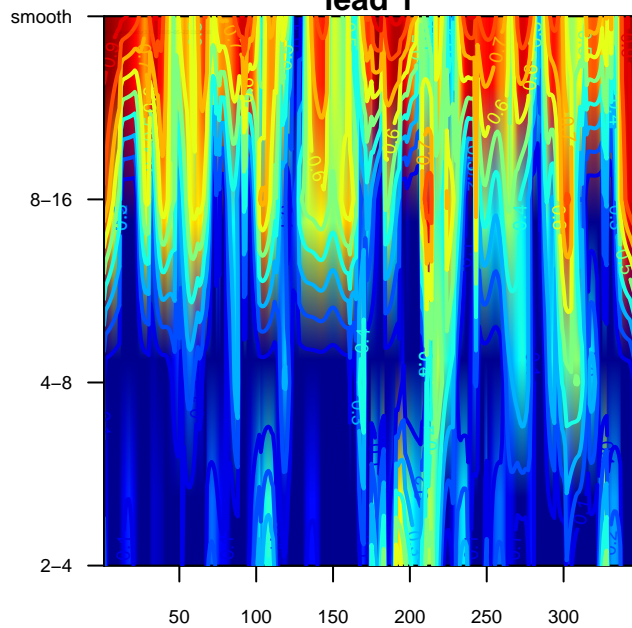
0.2

Wavelet Local Multiple Cross-Correlation

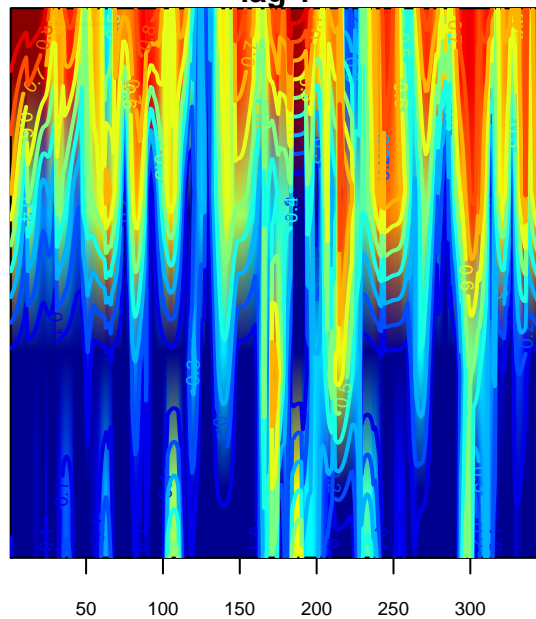


Wavelet Local Multiple Cross-Correlation

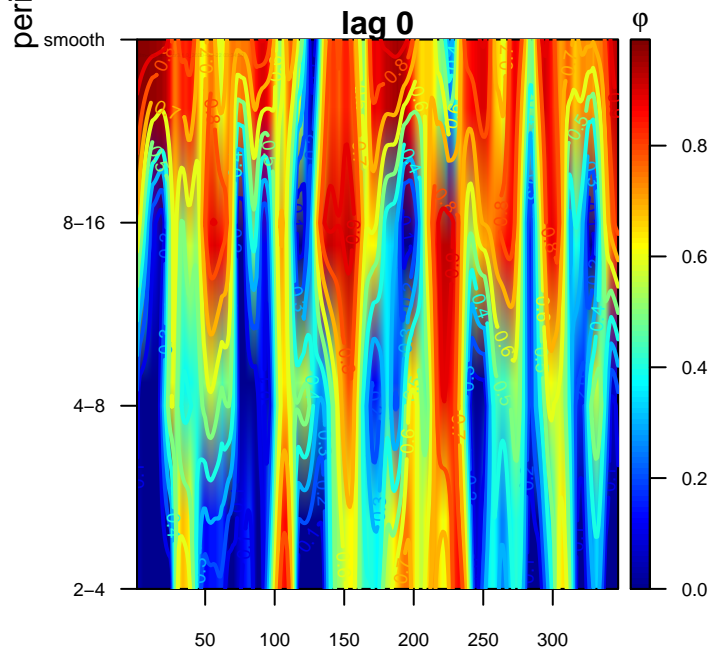
lead 1



lag 1

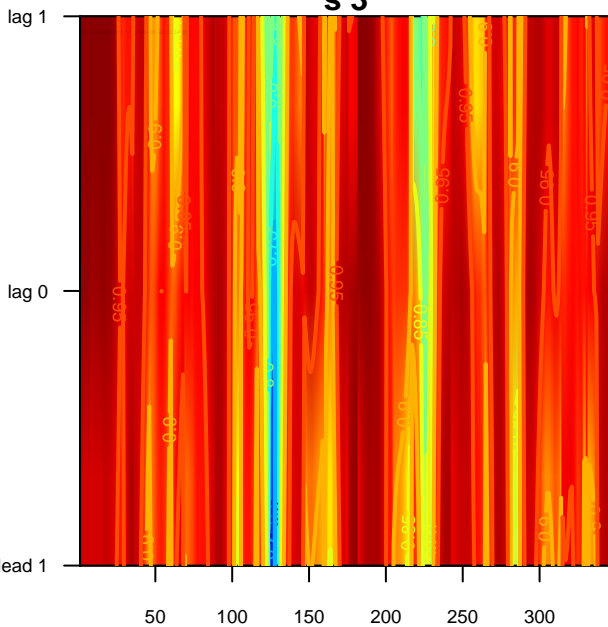


lag 0

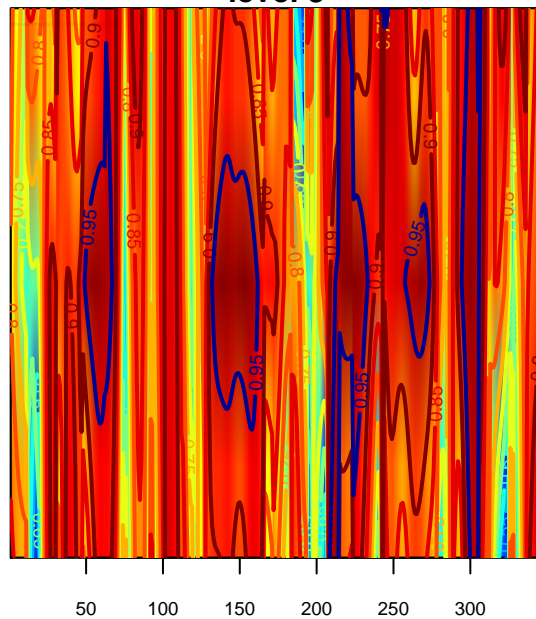


Wavelet Local Multiple Cross-Correlation

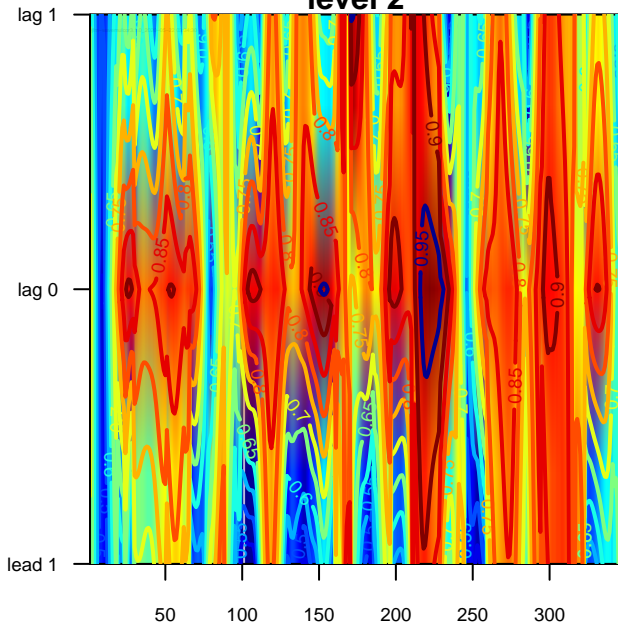
s 3



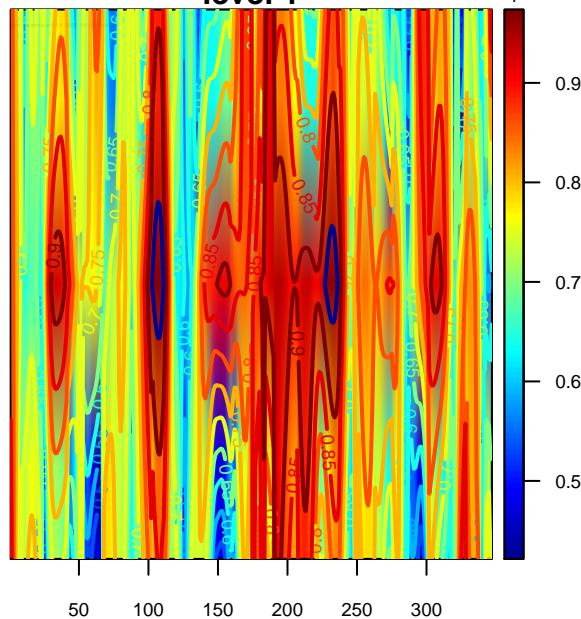
level 3



level 2



level 1

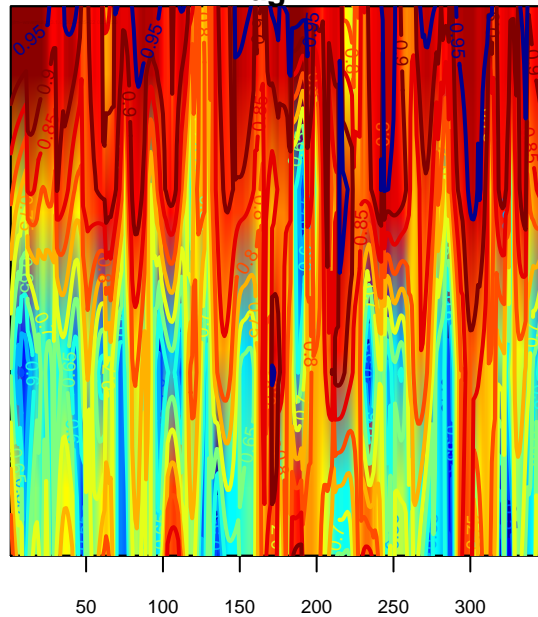
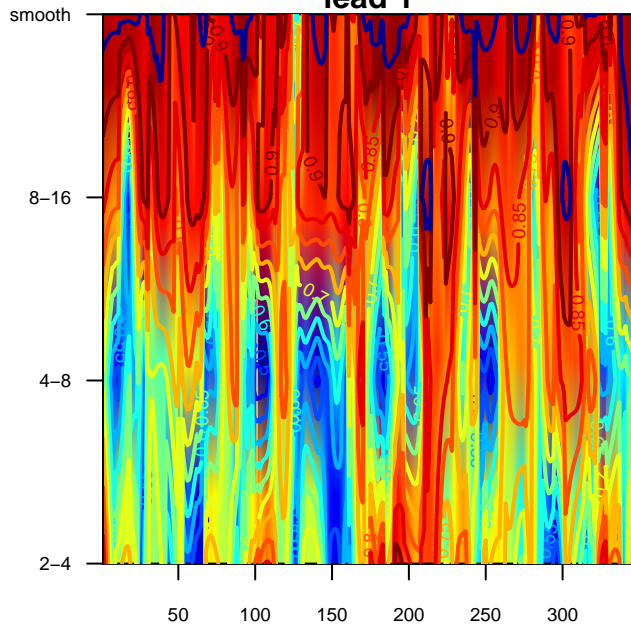


ϕ

Wavelet Local Multiple Cross-Correlation

lead 1

lag 1



lag 0

ϕ

smooth

8-16

4-8

2-4

50 100 150 200 250 300

0.9

0.8

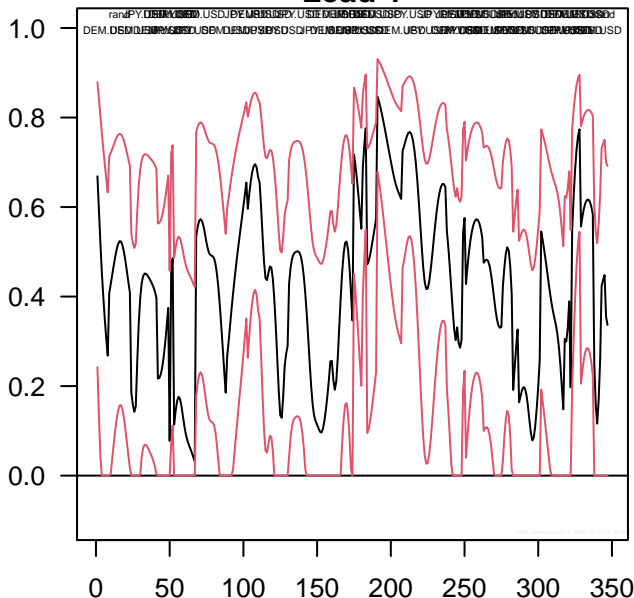
0.7

0.6

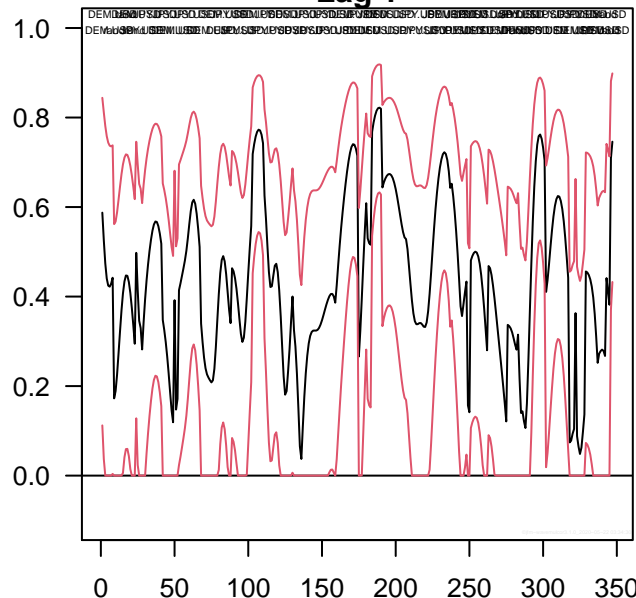
0.5

This figure is a heatmap showing the wavelet local multiple cross-correlation for lag 0. The y-axis represents the period, with labels 'smooth', '8-16', '4-8', and '2-4'. The x-axis represents the phase ϕ , with labels 50, 100, 150, 200, 250, and 300. A color bar on the right indicates the correlation values, ranging from 0.5 (blue) to 0.9 (red). The plot shows a complex pattern of correlation, with a prominent blue region (low correlation) in the upper left and a red region (high correlation) in the lower right.

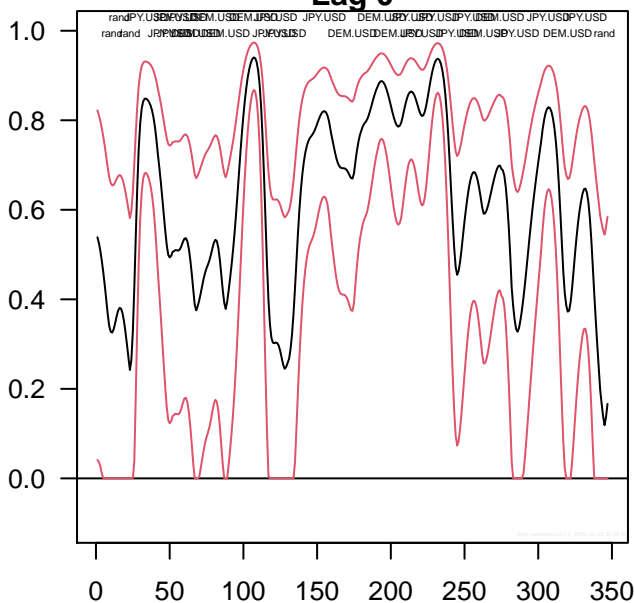
Lead 1



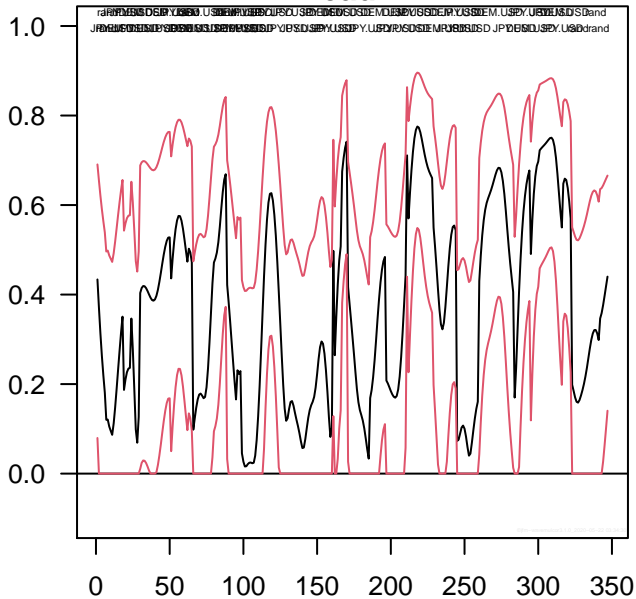
Lag 1



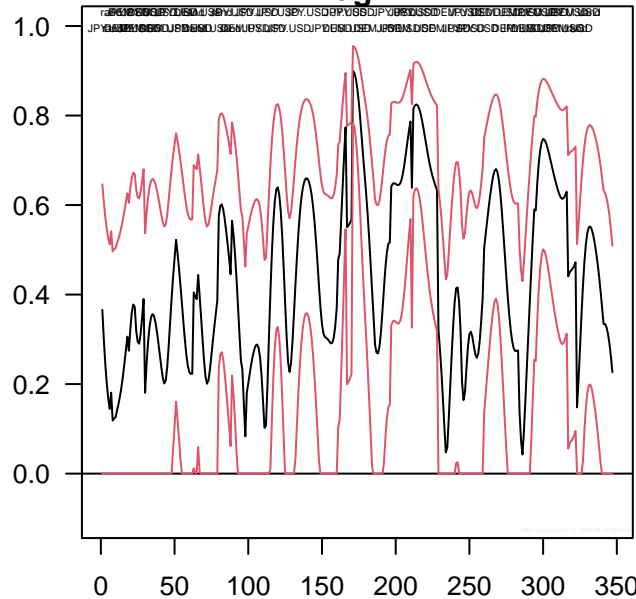
Lag 0



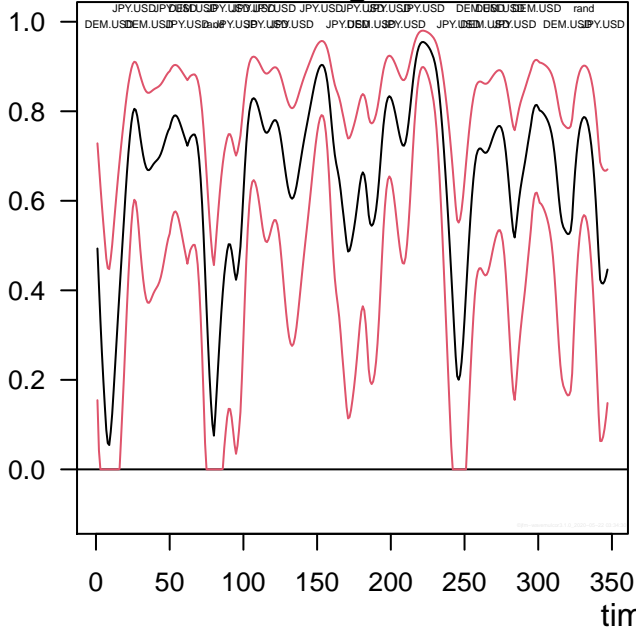
Lead 1



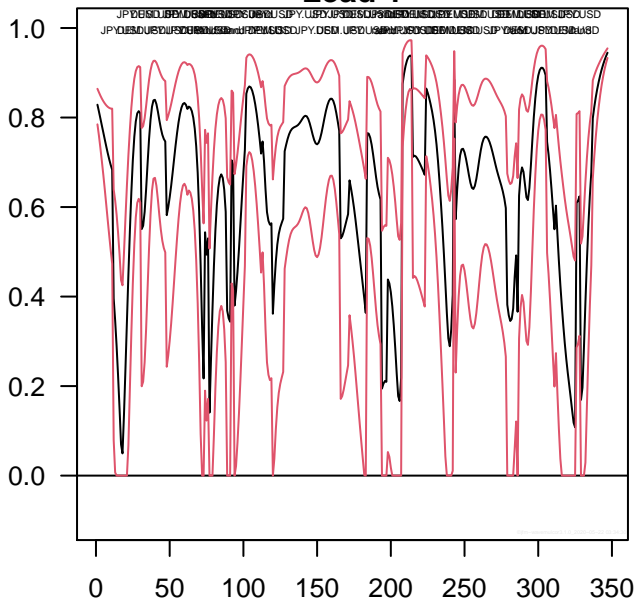
Lag 1



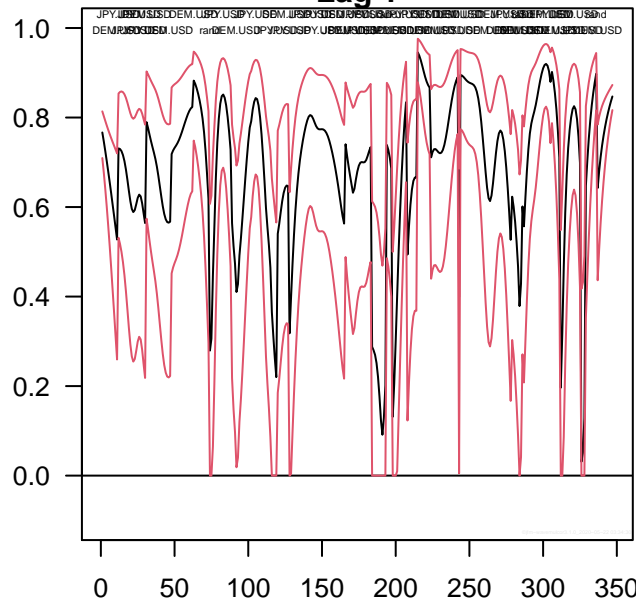
Lag 0



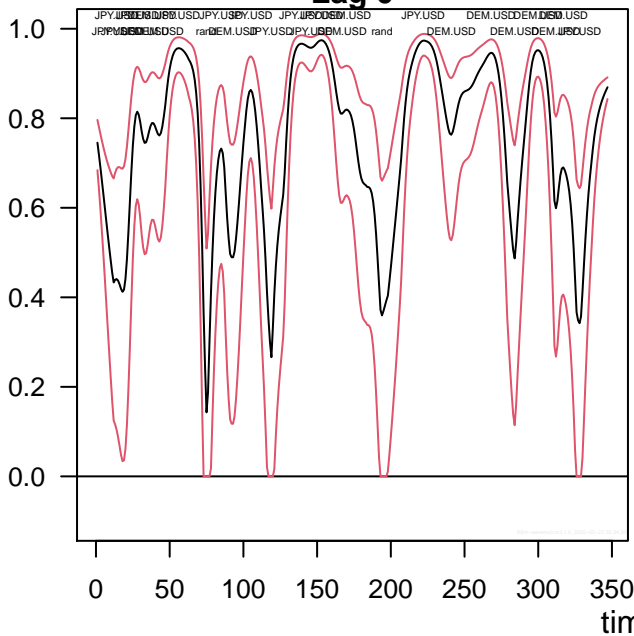
Lead 1



Lag 1

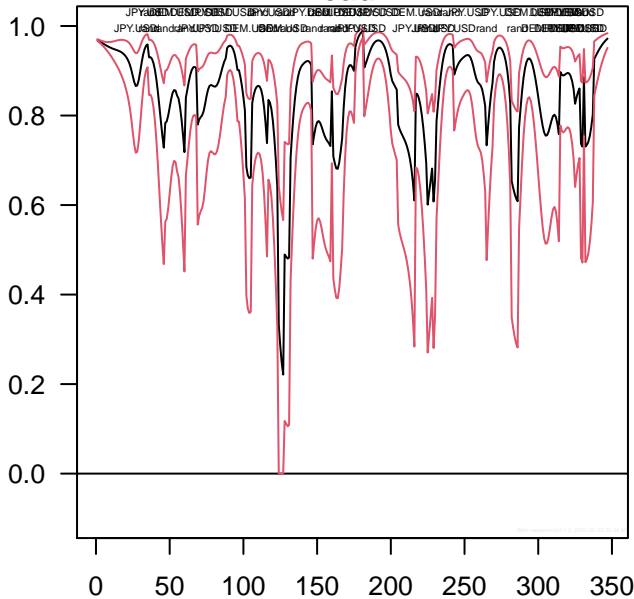


Lag 0

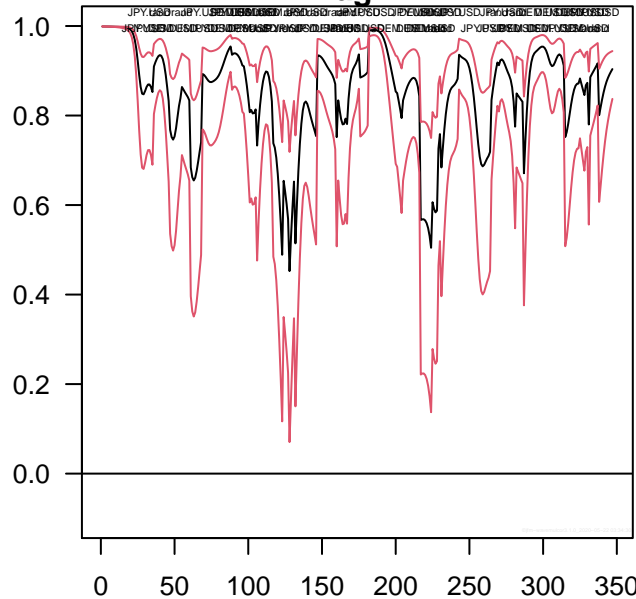


s 3

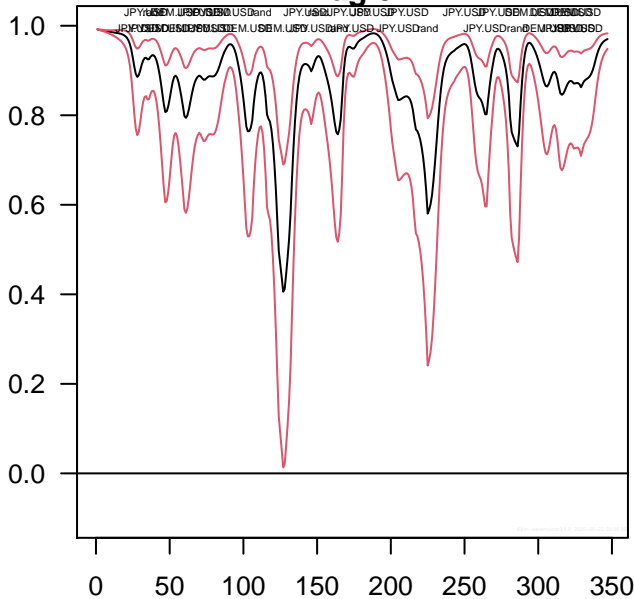
Lead 1



Lag 1



Lag 0



Wavelet Local Multiple Cross-Correlation

time

Lead 1

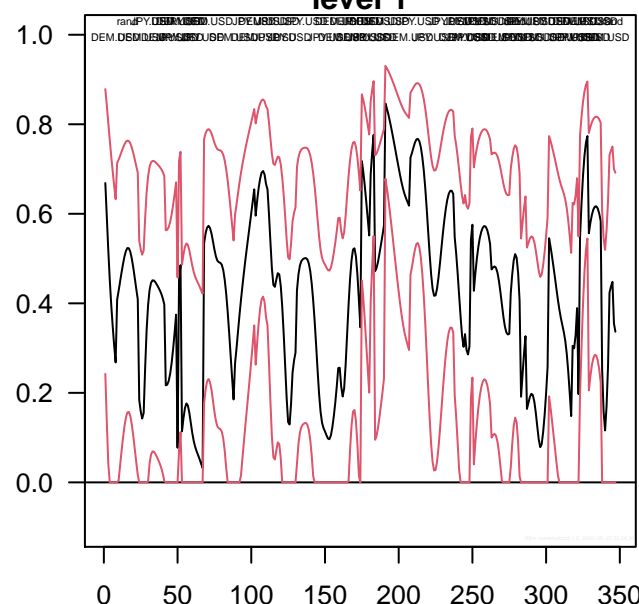
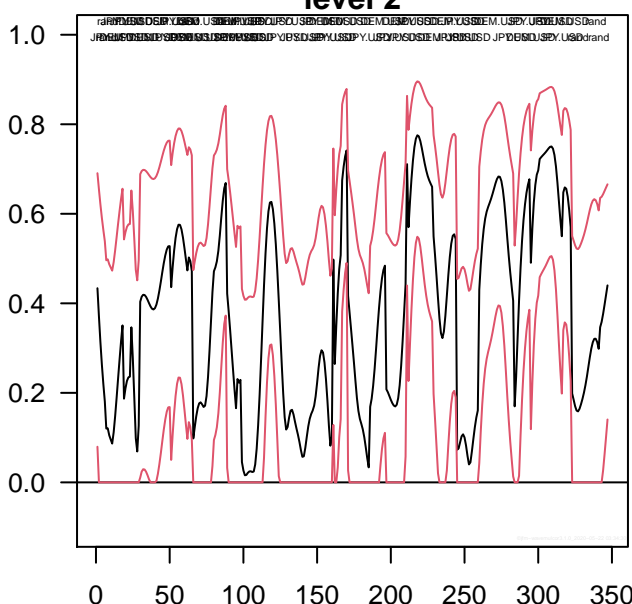
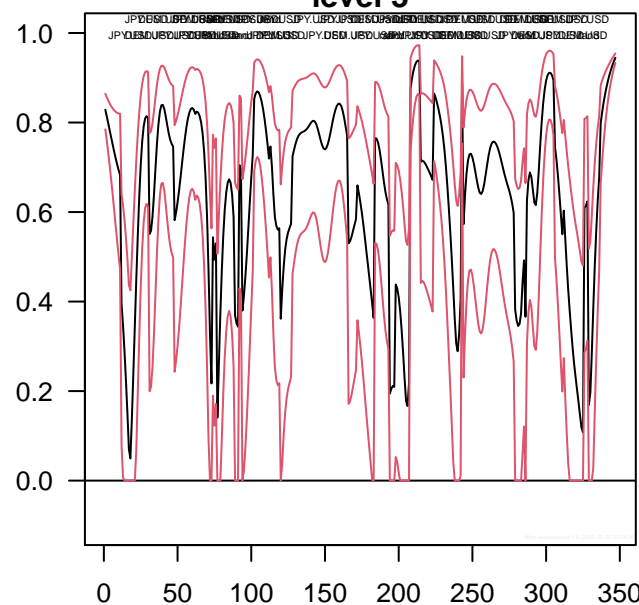
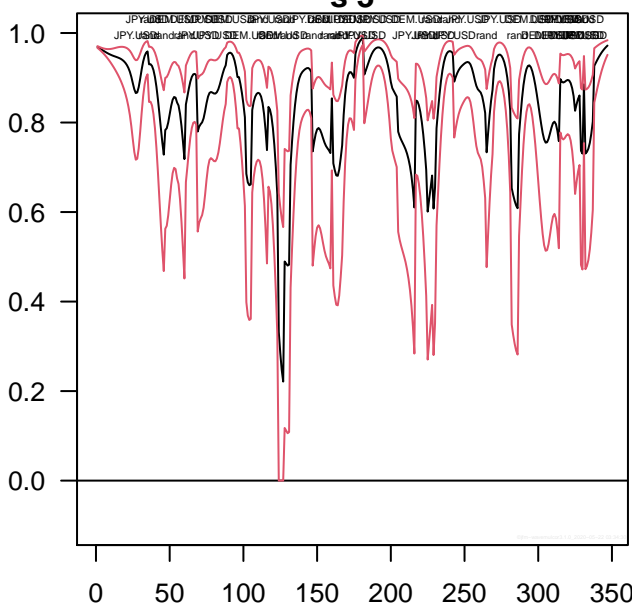
s 3

level 3

level 2

level 1

Wavelet Local Multiple Cross-Correlation



time

Lag 0

S 3

level 3

level 2

level 1

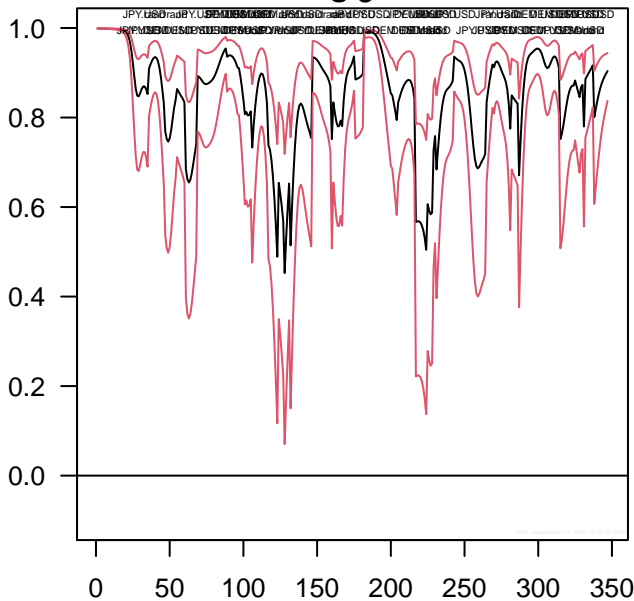
Wavelet Local Multiple Cross-Correlation

time

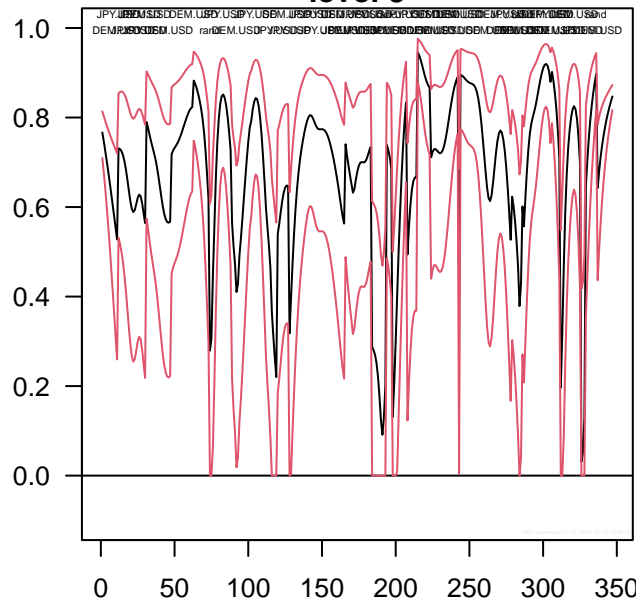
Wavelet Local Multiple Cross-Correlation

Lag 1

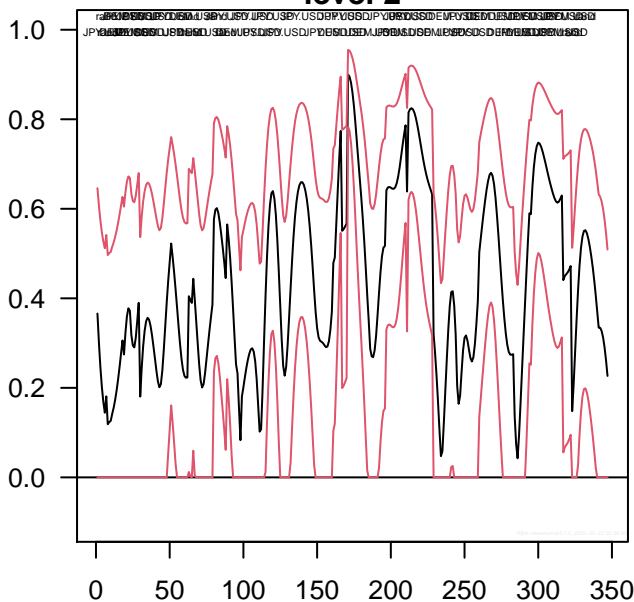
s 3



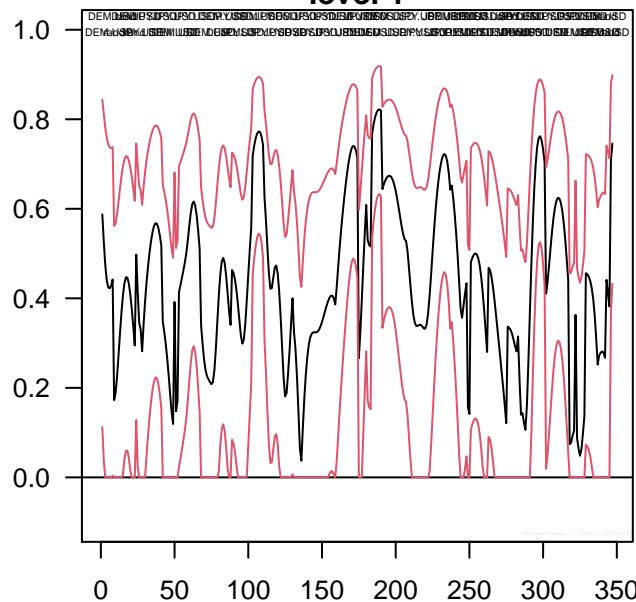
level 3



level 2



level 1



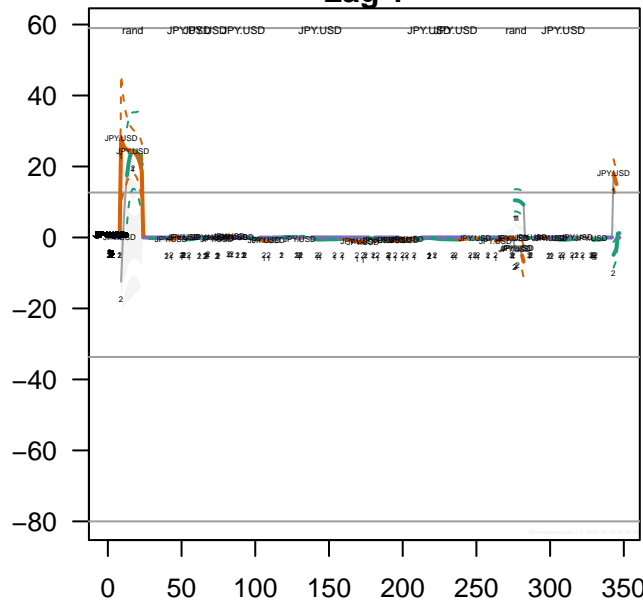
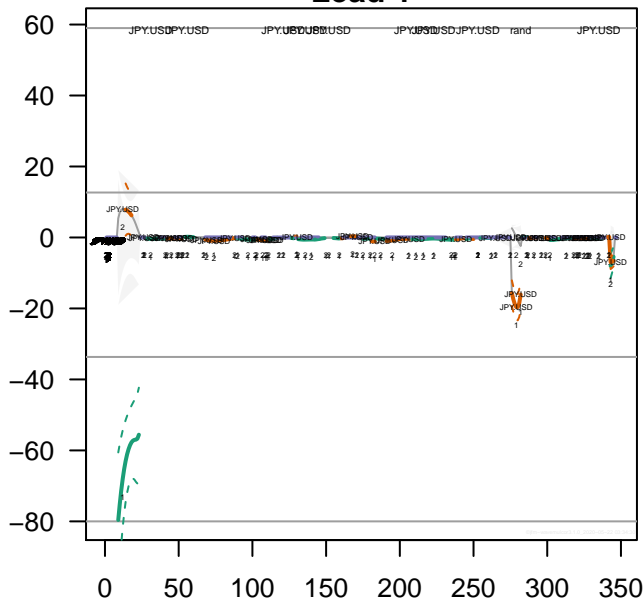
time

level 1

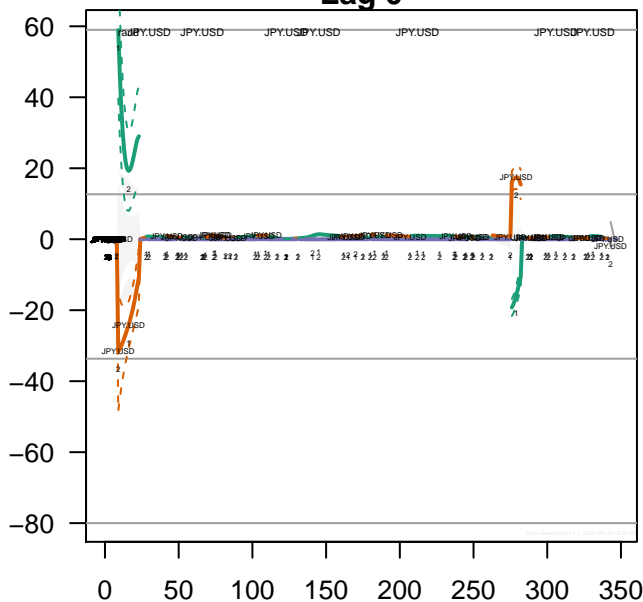
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0

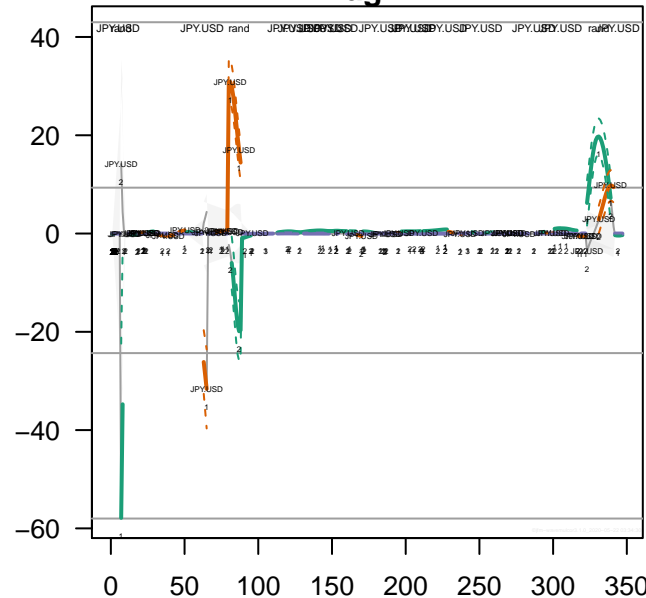
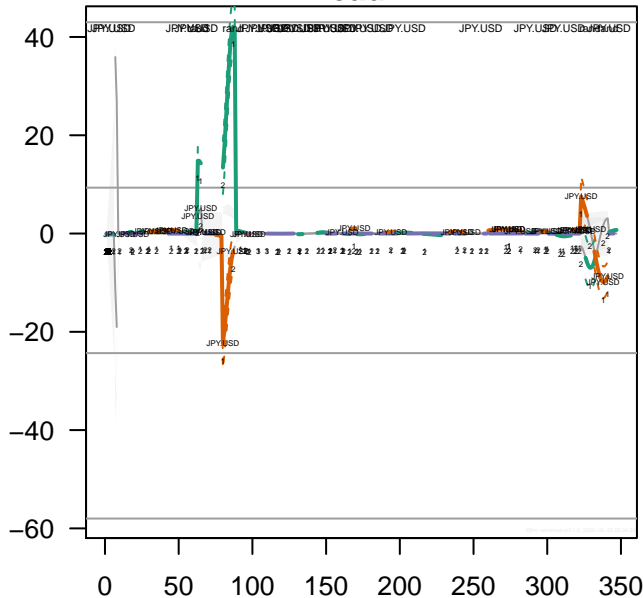


time

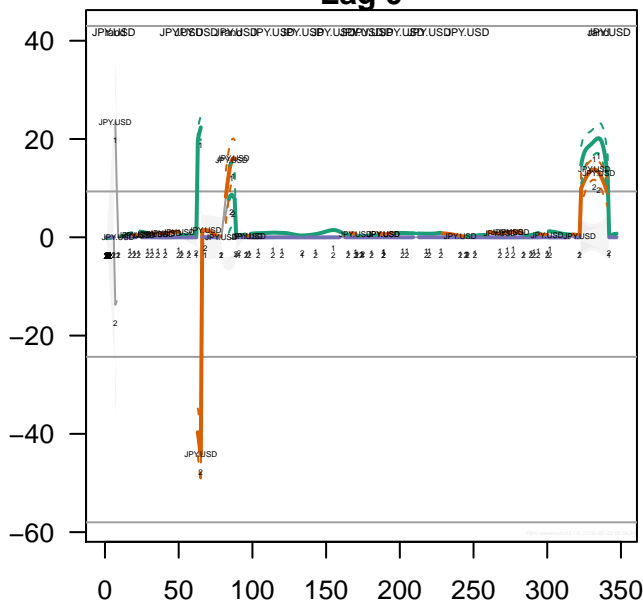
level 2

Lead 1

Lag 1



Lag 0



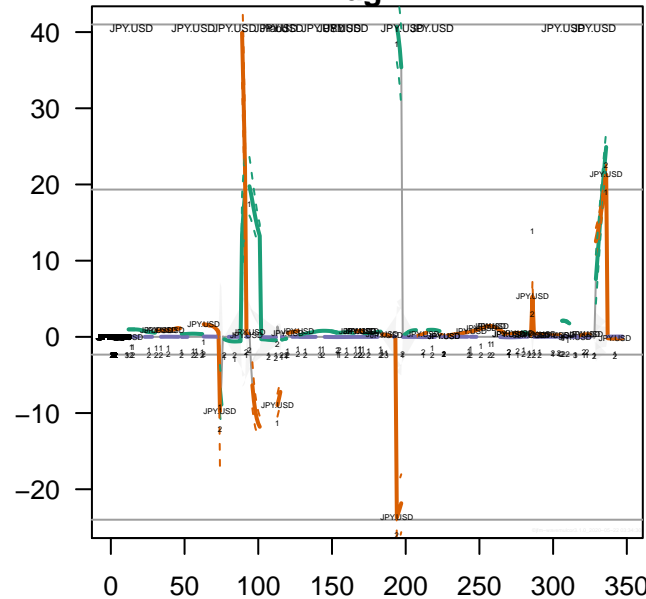
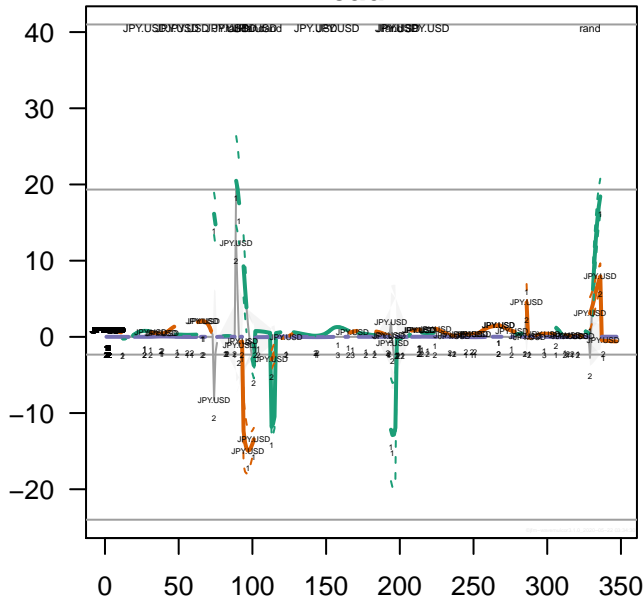
time

Wavelet Local Multiple Cross-Regression

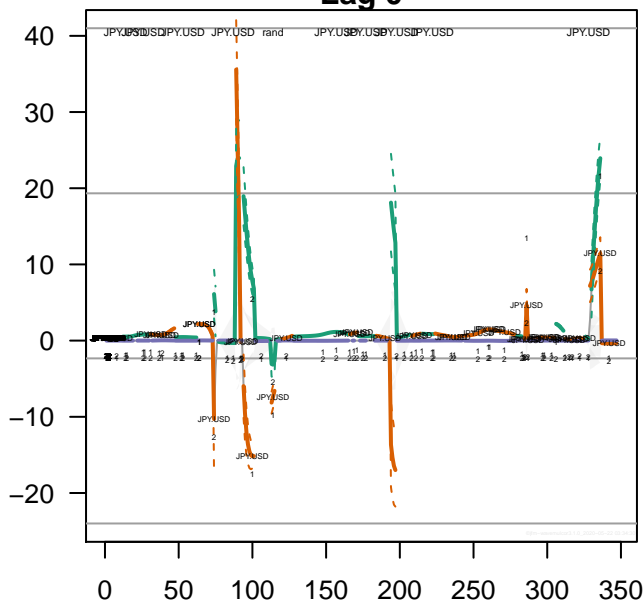
level 3

Lead 1

Lag 1



Lag 0



time

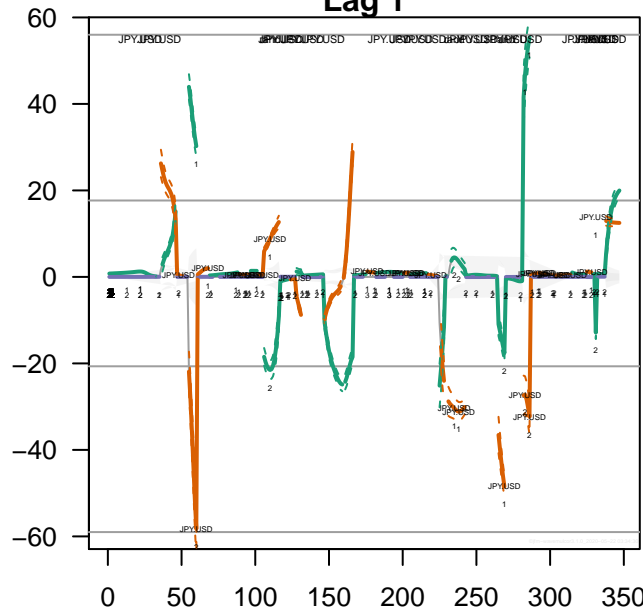
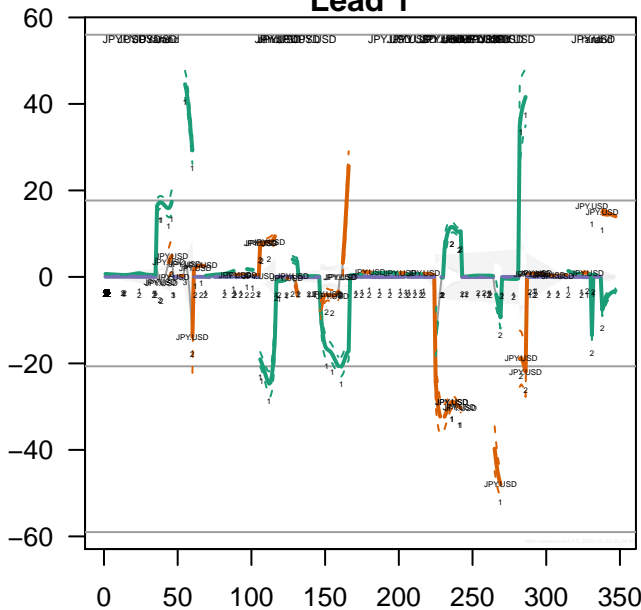
Wavelet Local Multiple Cross-Regression

s 3

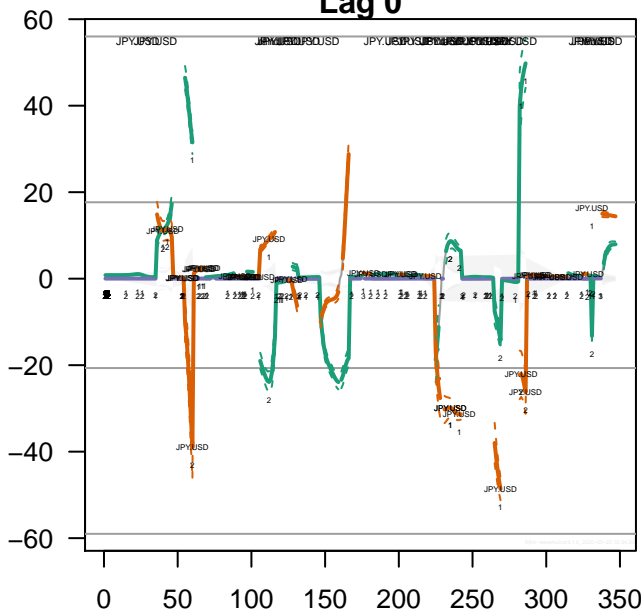
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression

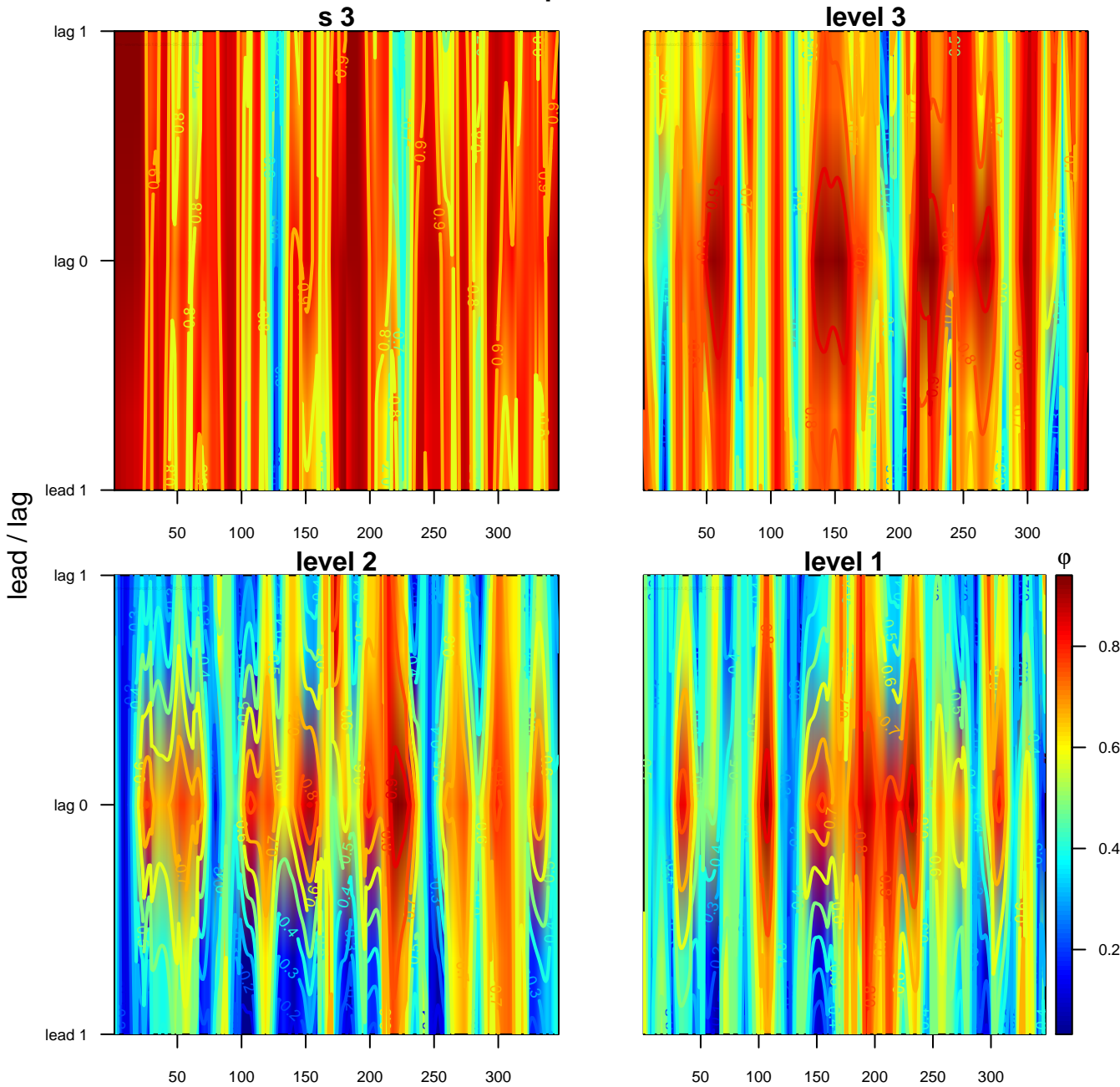


Lag 0



time

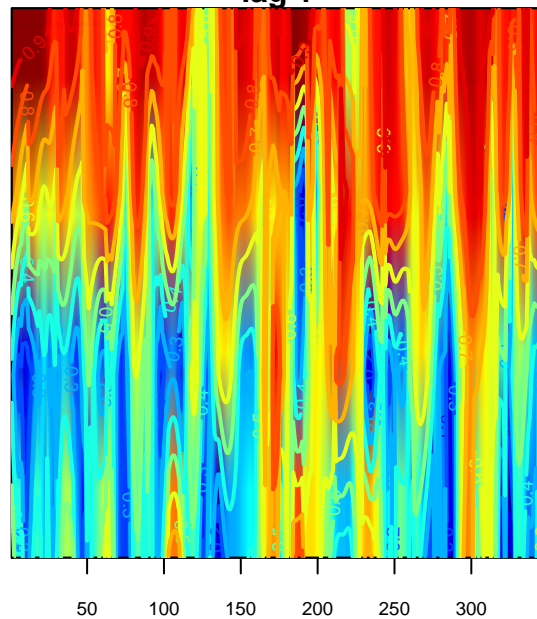
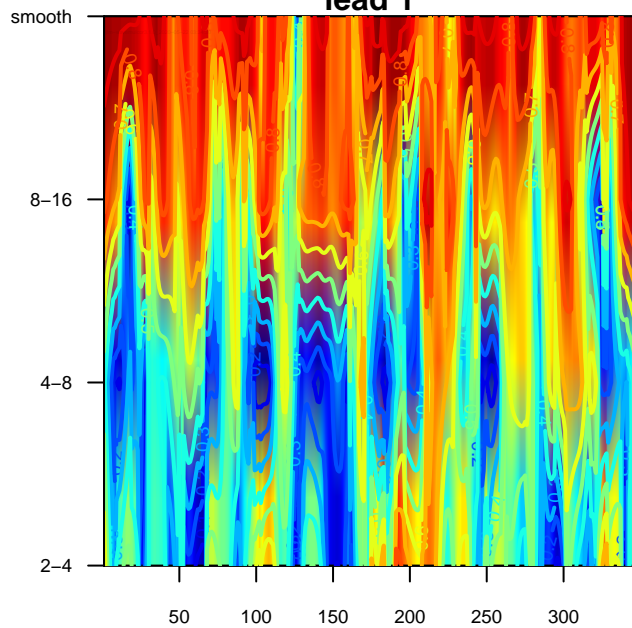
Wavelet Local Multiple Cross-Correlation



Wavelet Local Multiple Cross-Correlation

lead 1

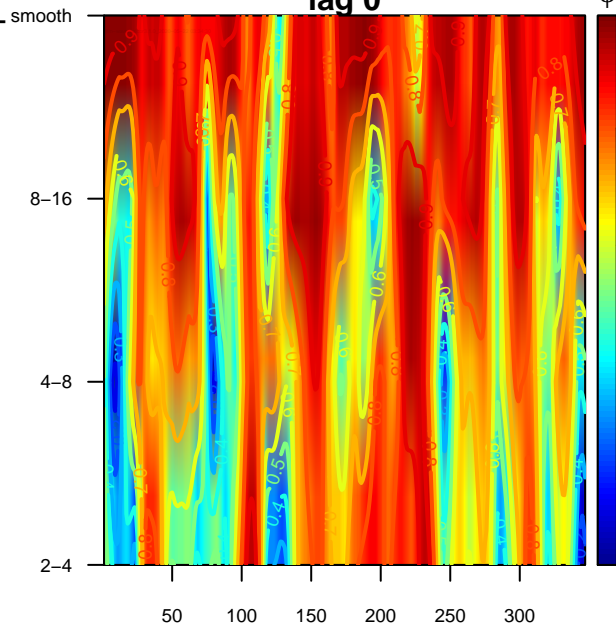
lag 1



lag 0

ϕ

period



0.8

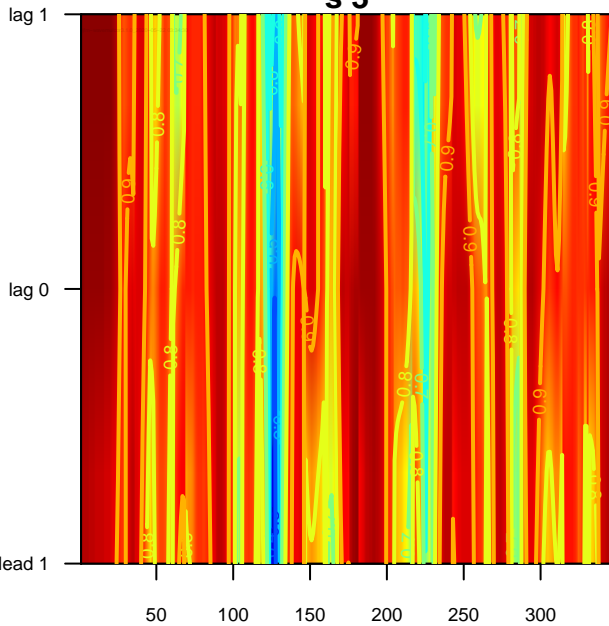
0.6

0.4

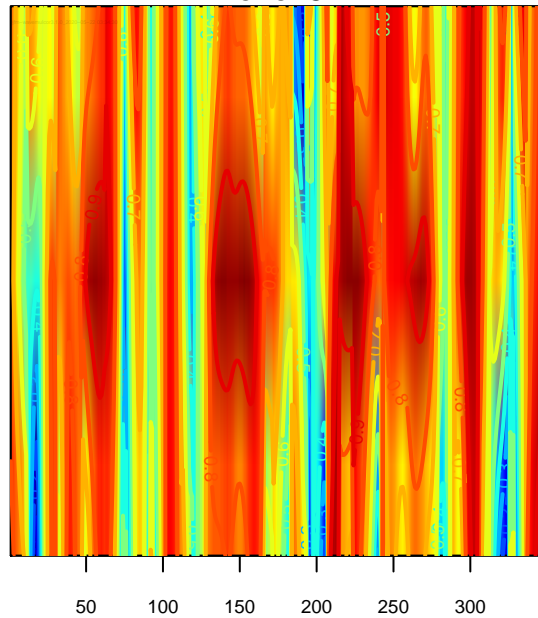
0.2

Wavelet Local Multiple Cross-Correlation

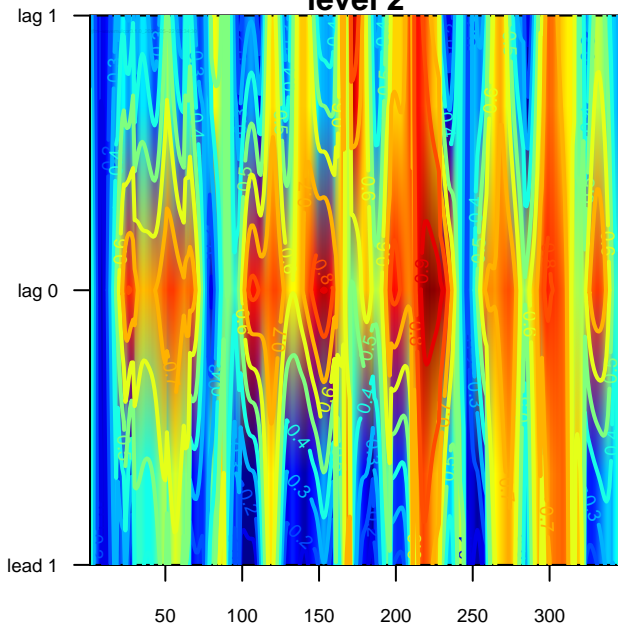
s 3



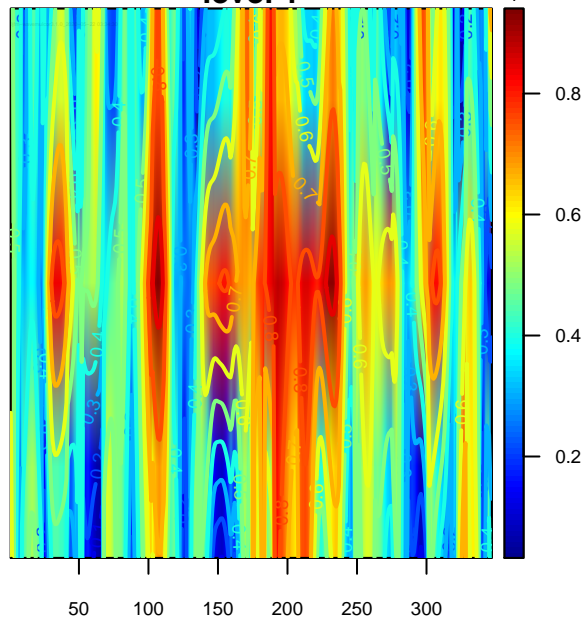
level 3



level 2



level 1

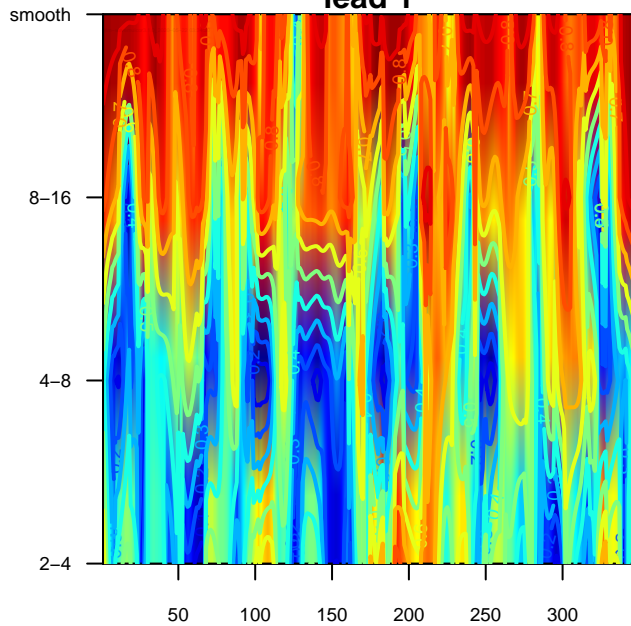


ϕ

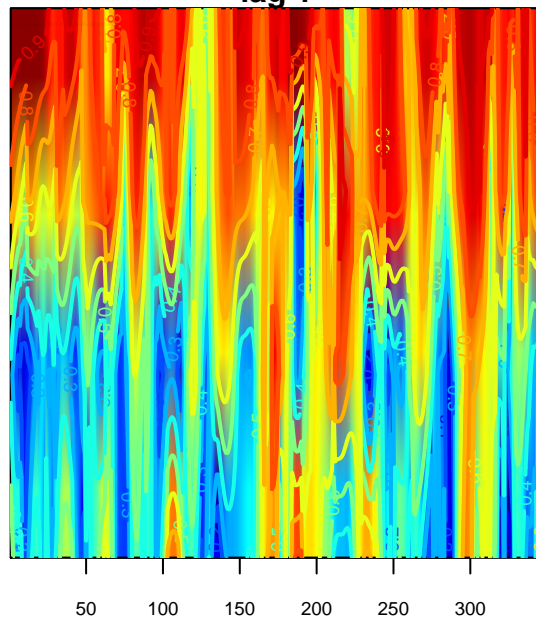


Wavelet Local Multiple Cross-Correlation

lead 1

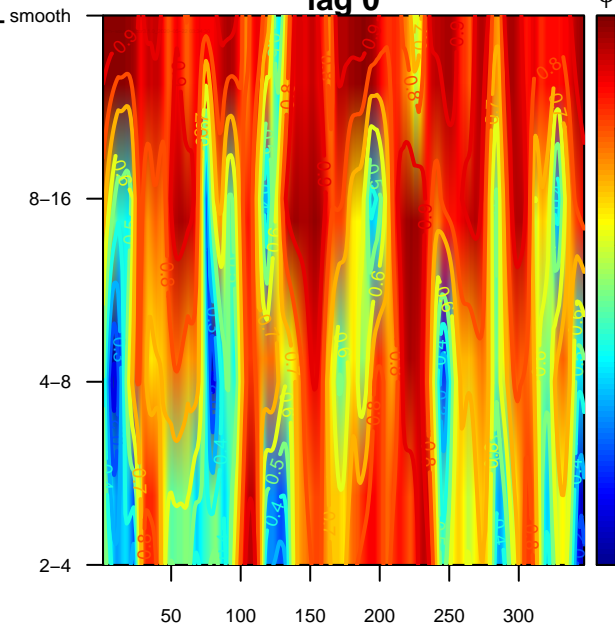


lag 1



lag 0

period



ϕ

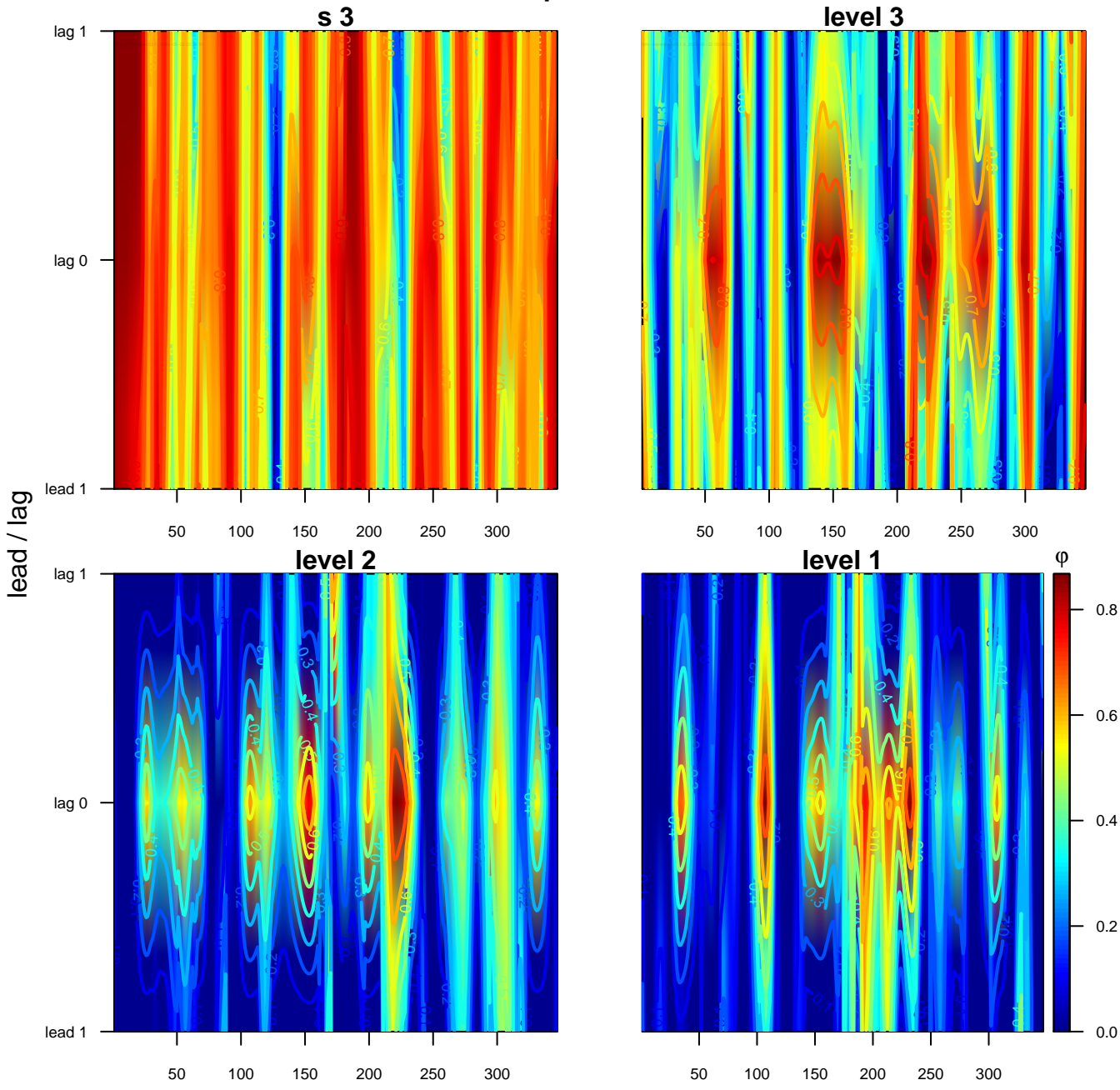
0.8

0.6

0.4

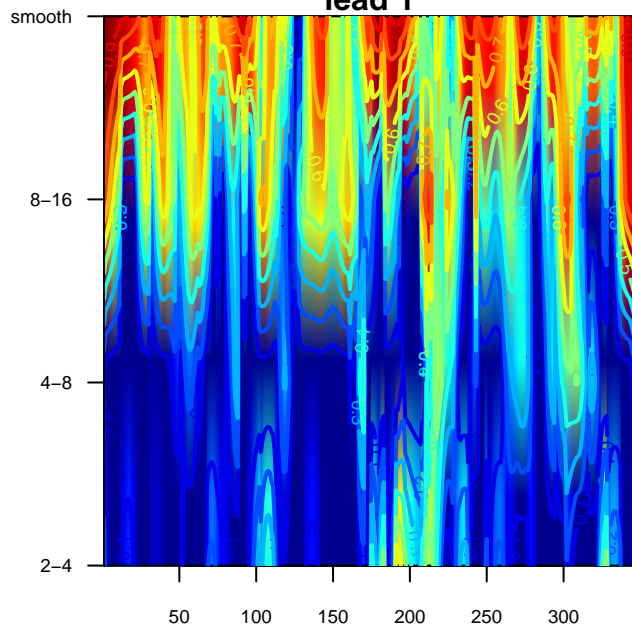
0.2

Wavelet Local Multiple Cross-Correlation

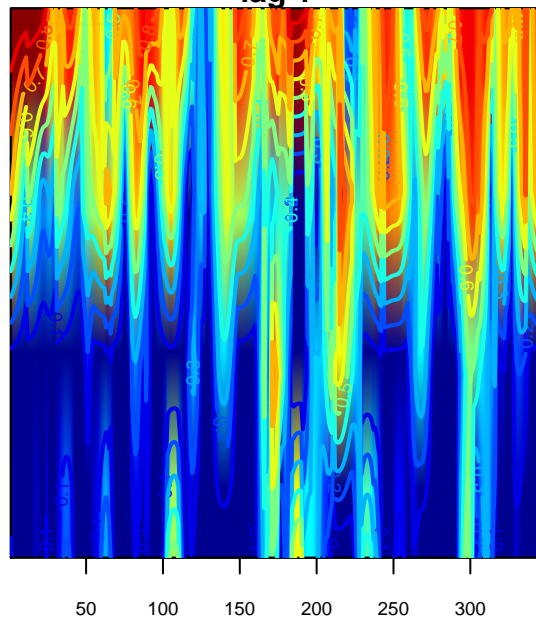


Wavelet Local Multiple Cross-Correlation

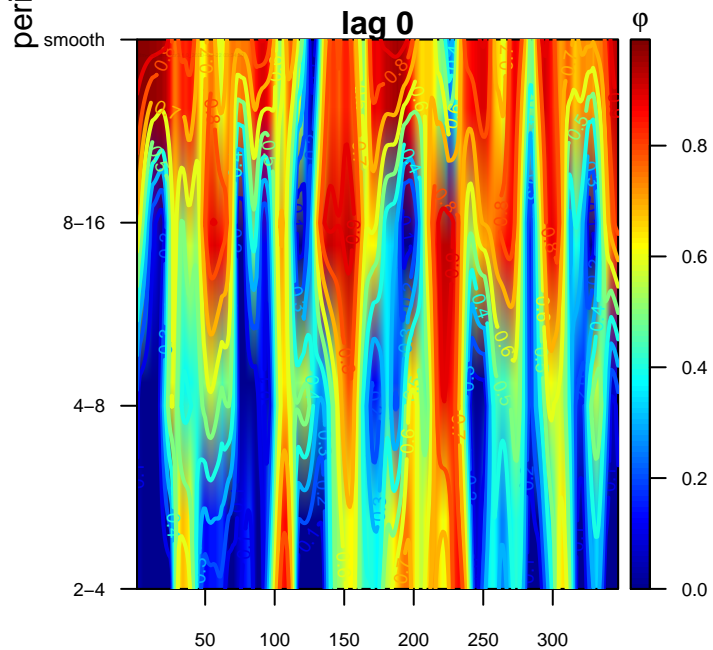
lead 1



lag 1

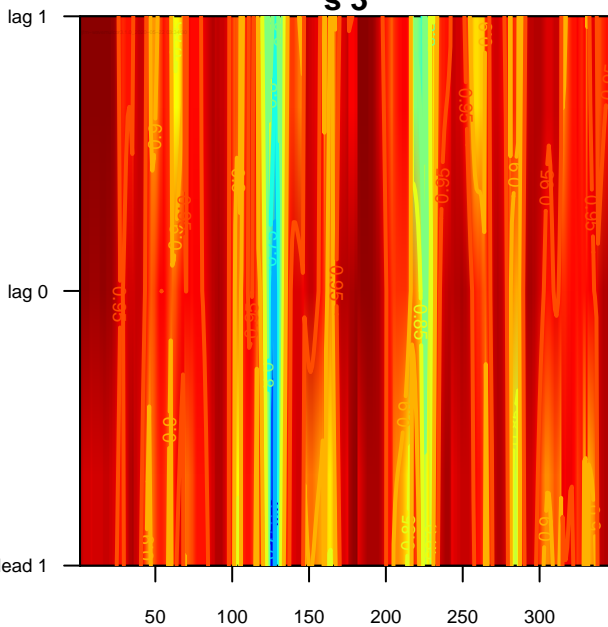


lag 0

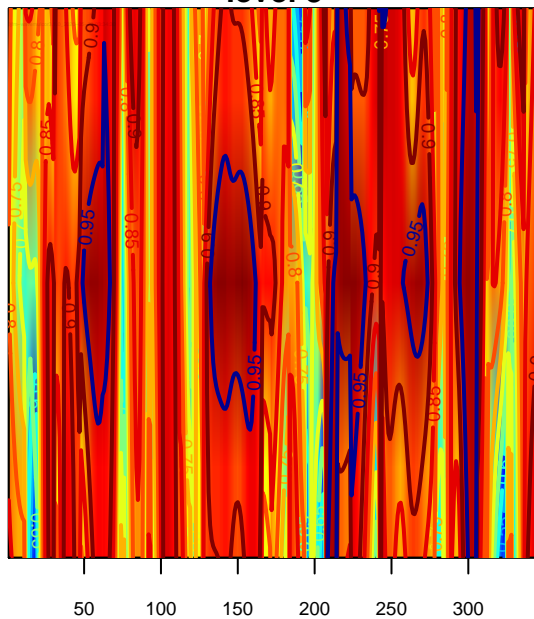


Wavelet Local Multiple Cross-Correlation

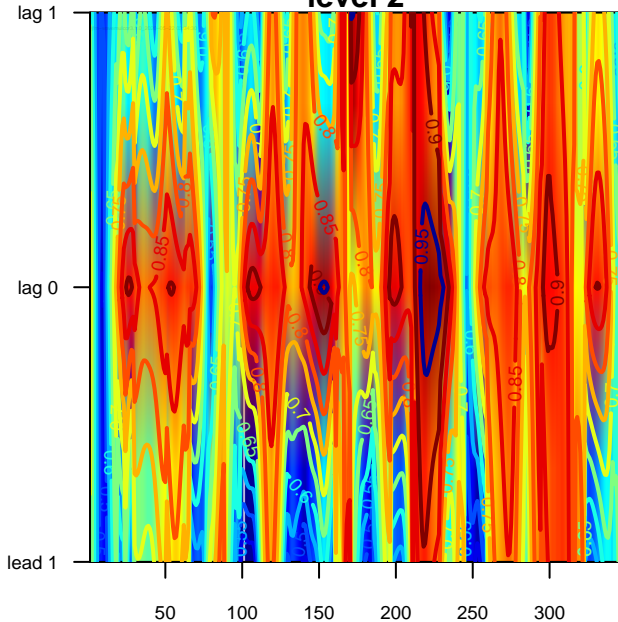
s 3



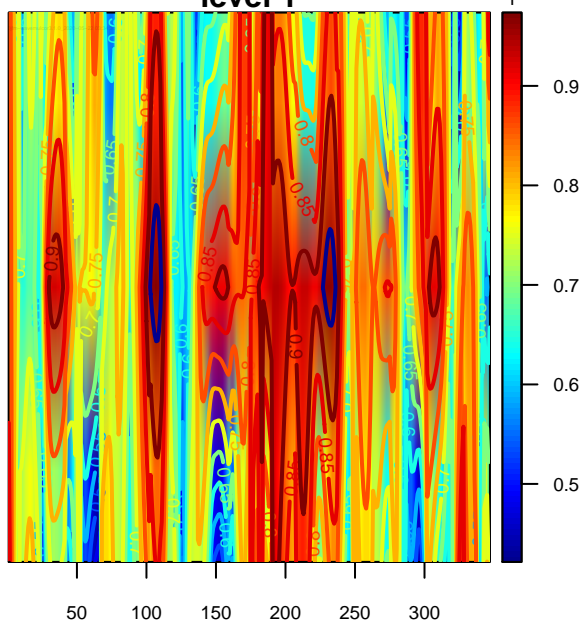
level 3



level 2



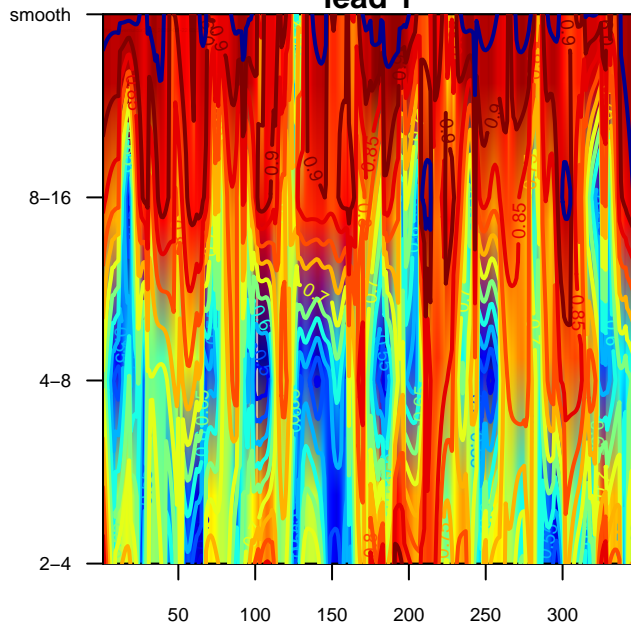
level 1



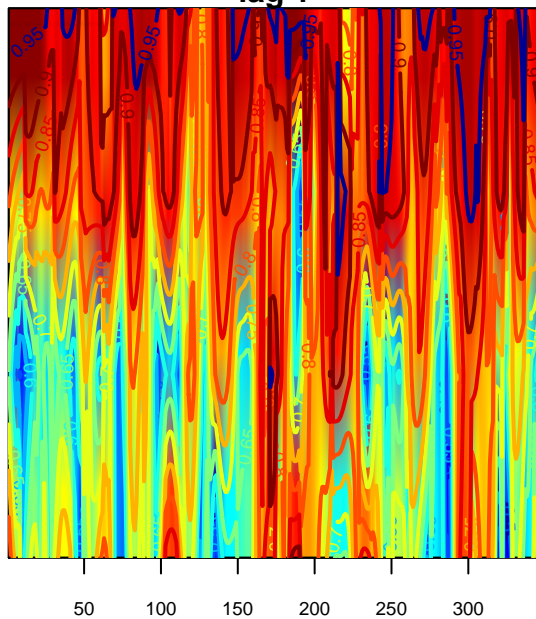
ϕ

Wavelet Local Multiple Cross-Correlation

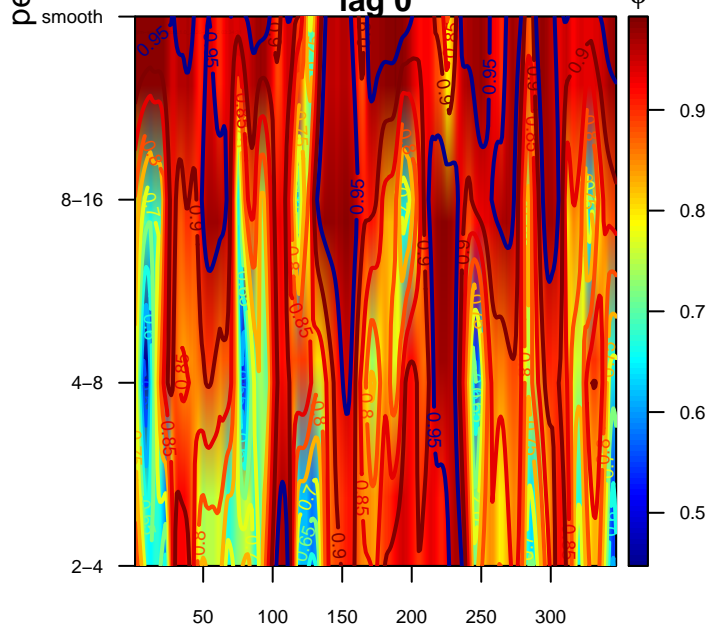
lead 1



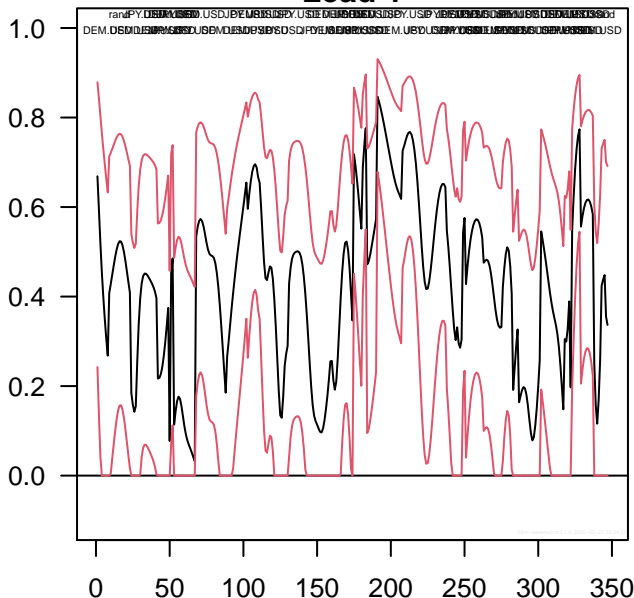
lag 1



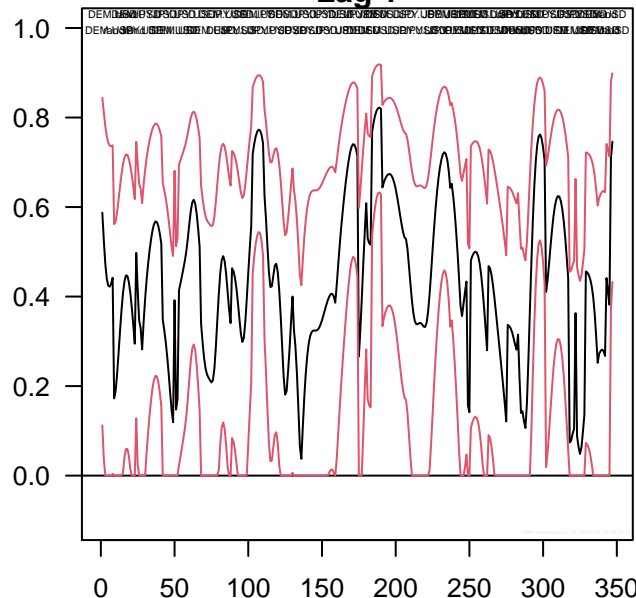
lag 0



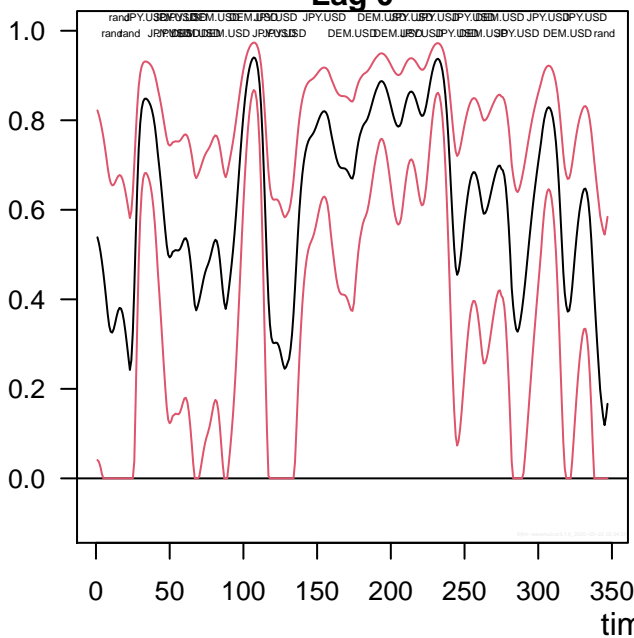
Lead 1



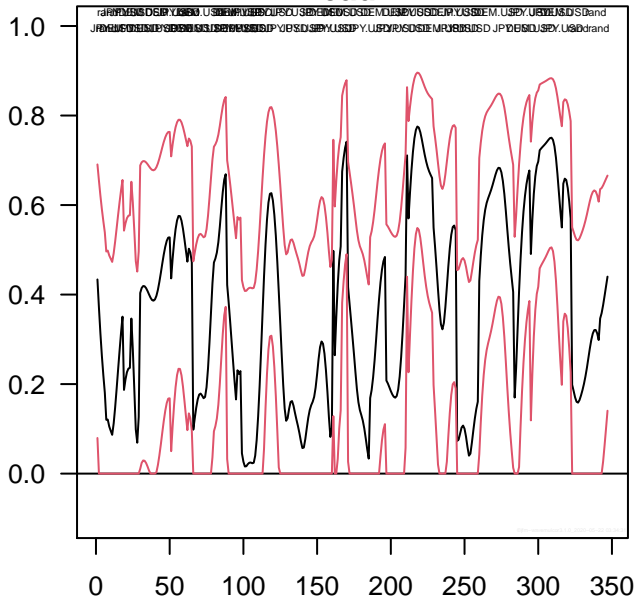
Lag 1



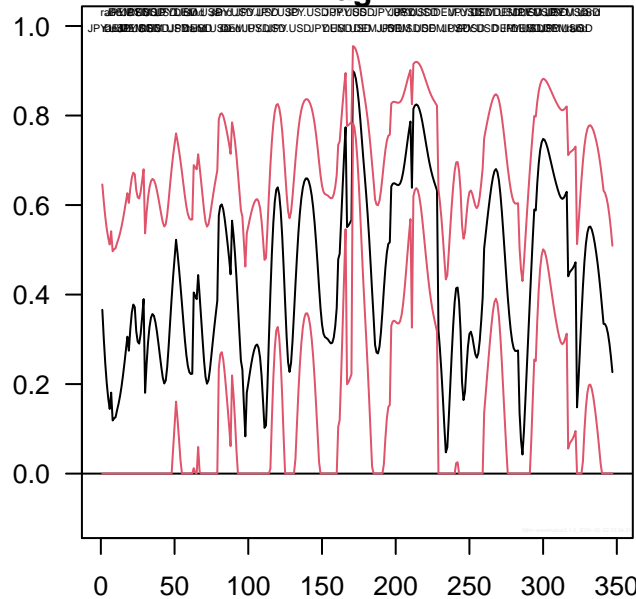
Lag 0



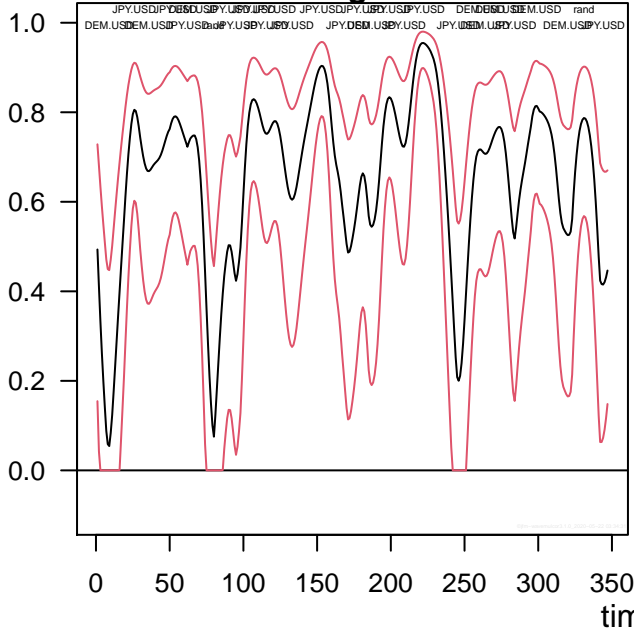
Lead 1



Lag 1

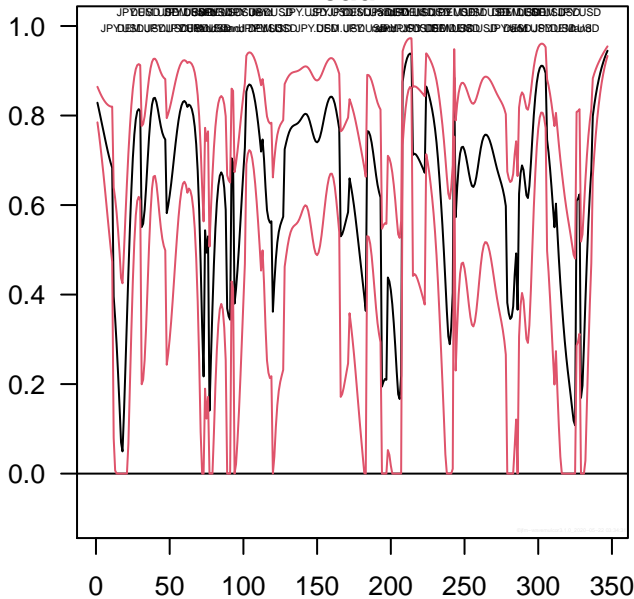


Lag 0

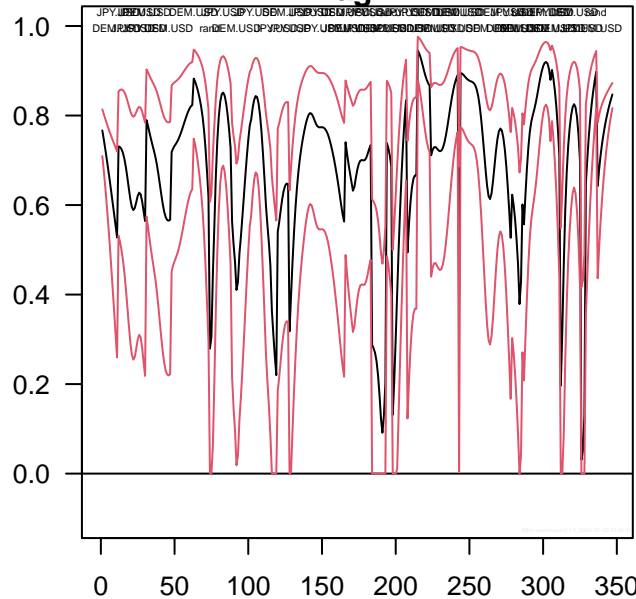


level 3

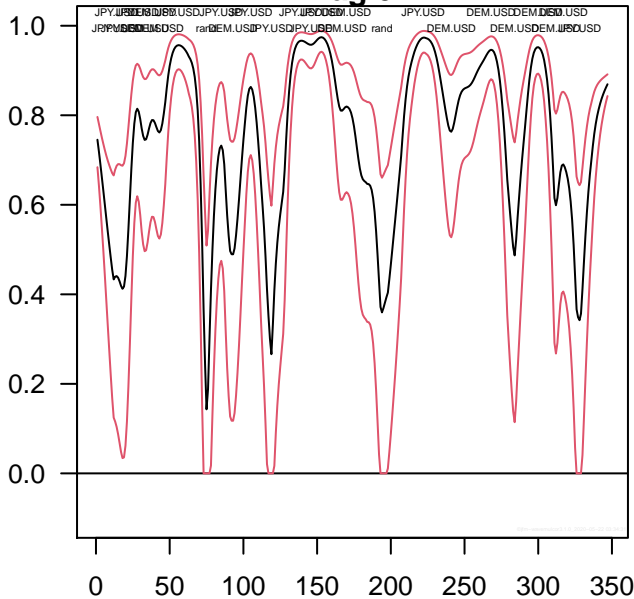
Lead 1



Lag 1



Lag 0

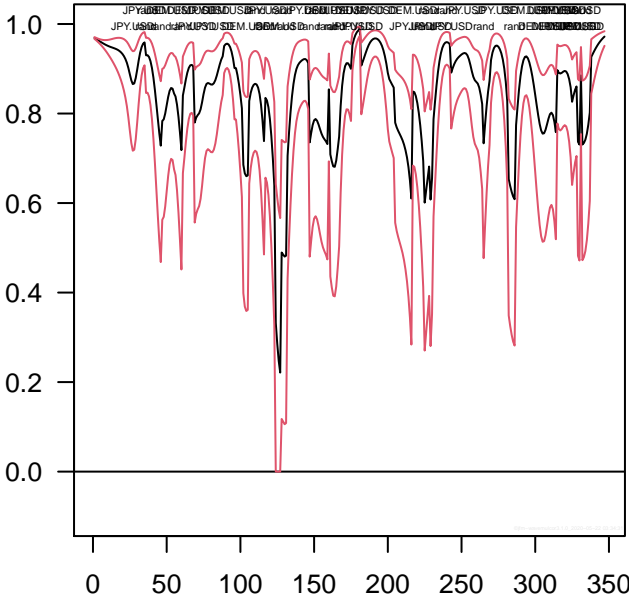


Wavelet Local Multiple Cross-Correlation

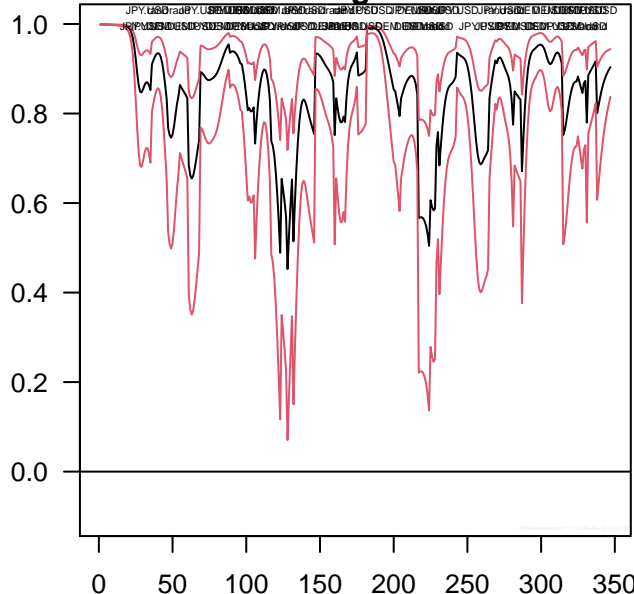
time

§ 5

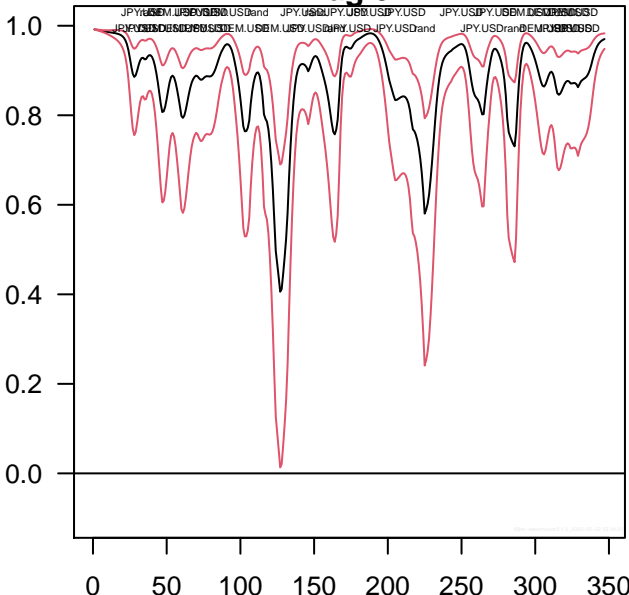
Lead 1



Lag 1



Lag 0



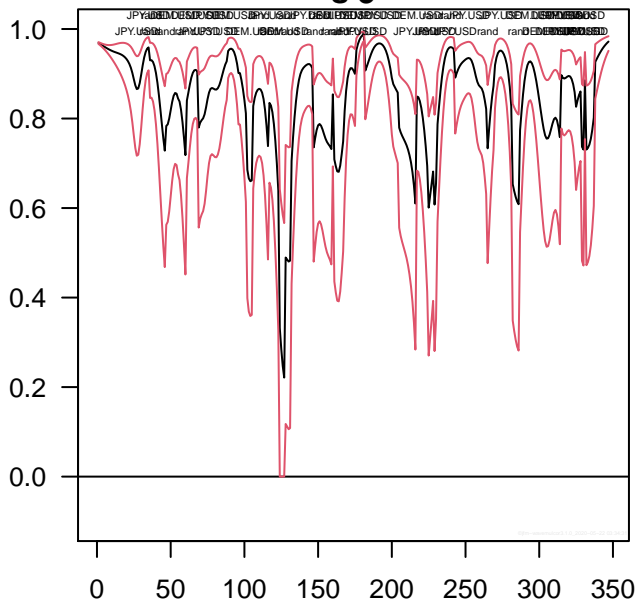
time

Wavelet Local Multiple Cross-Correlation

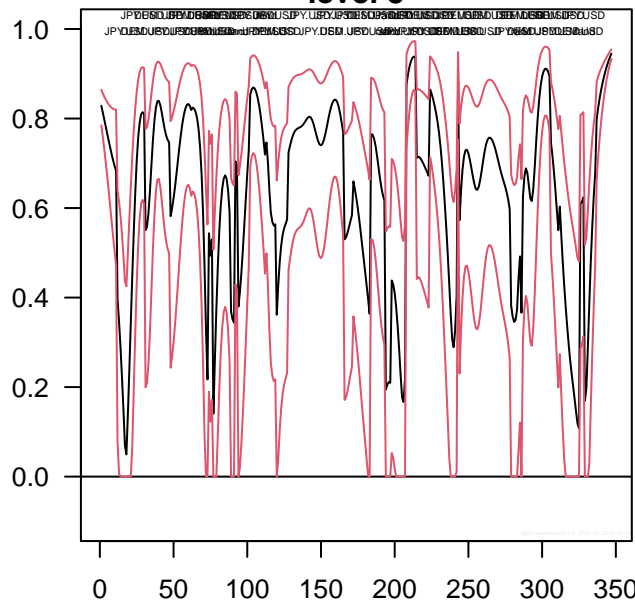
Wavelet Local Multiple Cross-Correlation

Lead 1

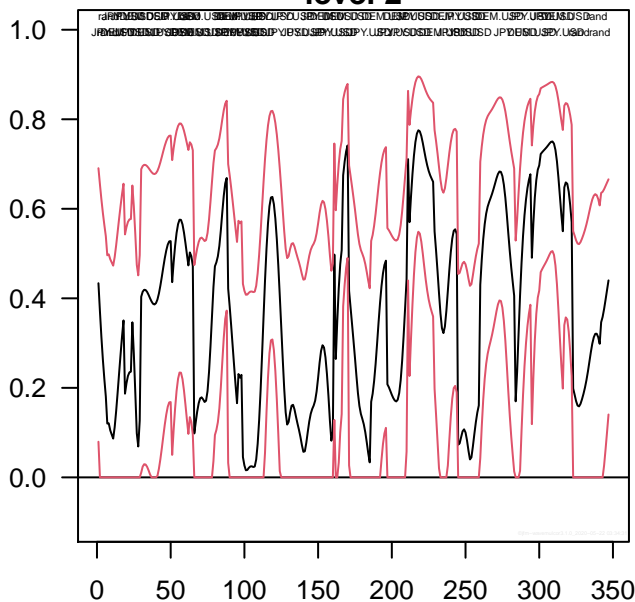
s 3



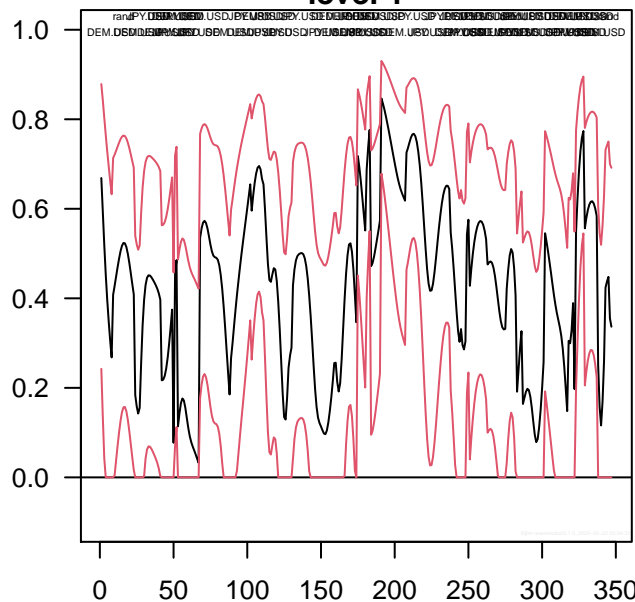
level 3



level 2



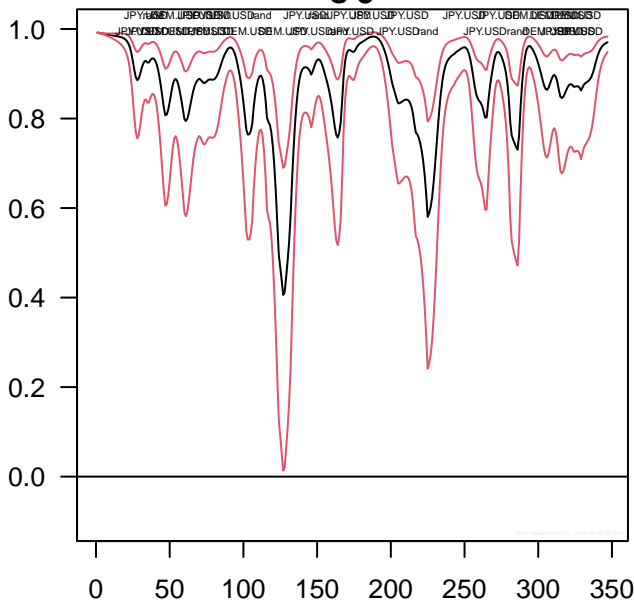
level 1



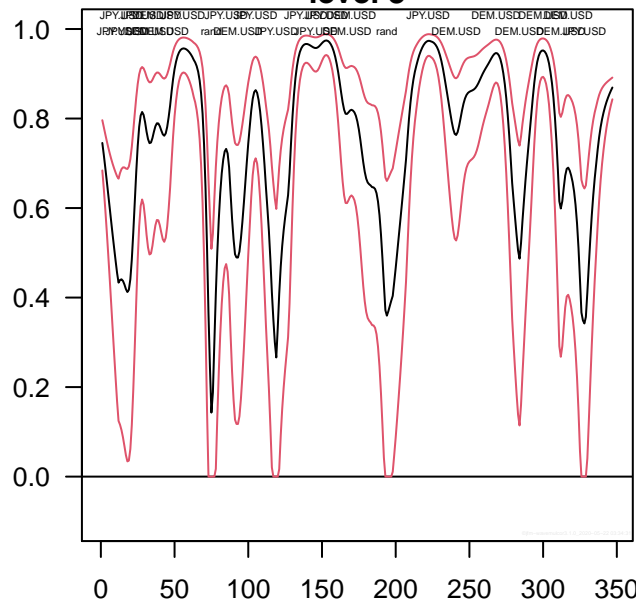
time

Lag 0

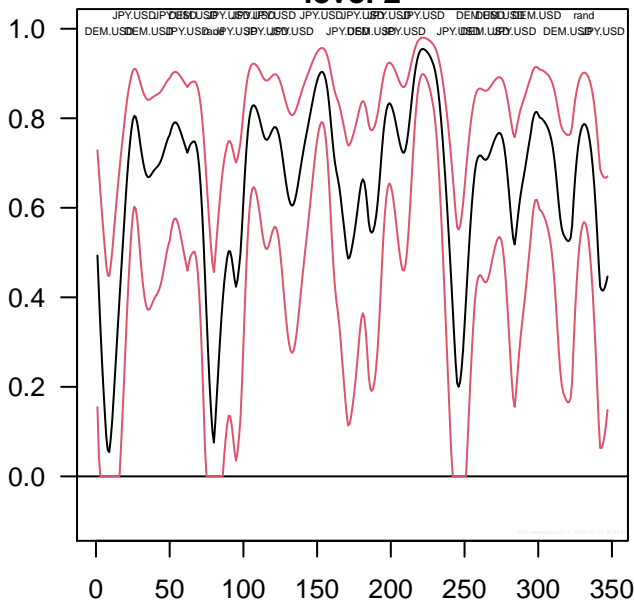
S 3



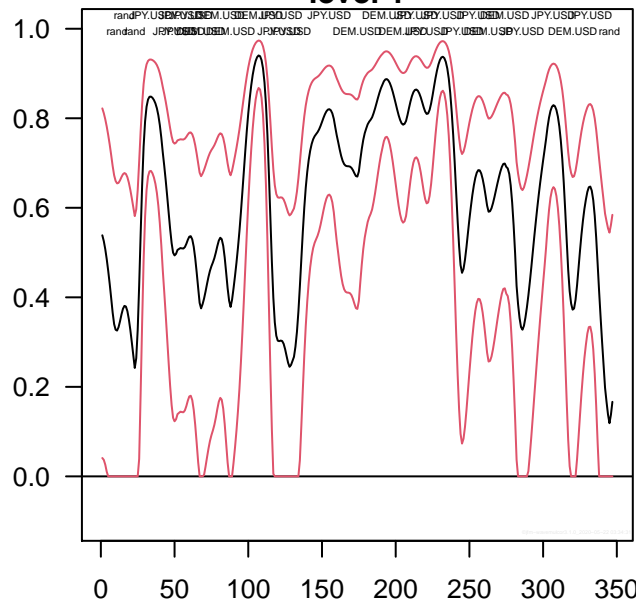
level 3



level 2



level 1



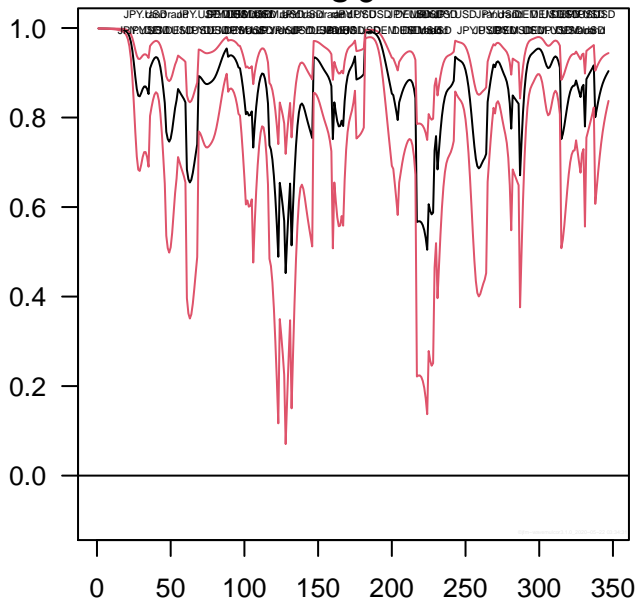
time

Wavelet Local Multiple Cross-Correlation

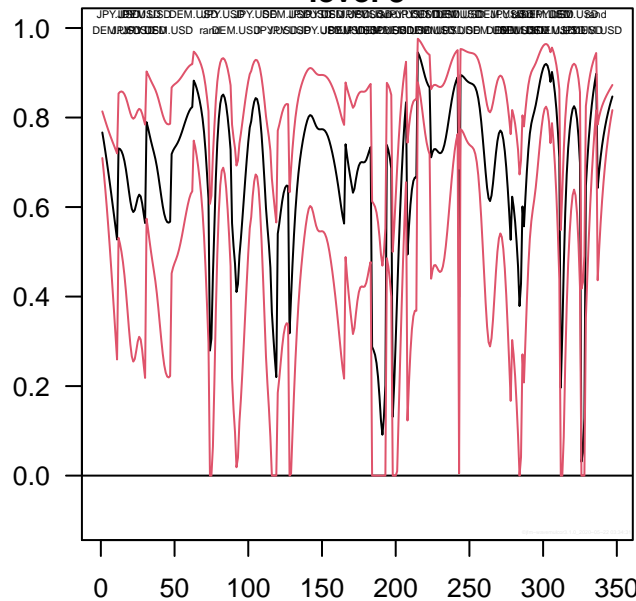
Wavelet Local Multiple Cross-Correlation

Lag 1

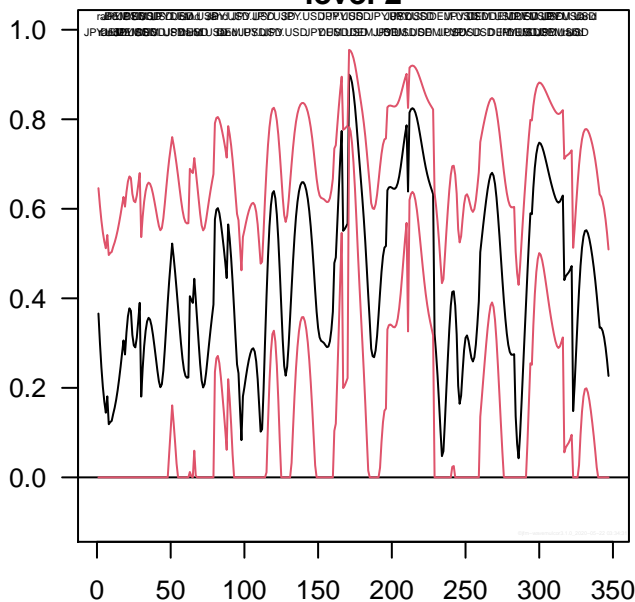
s 3



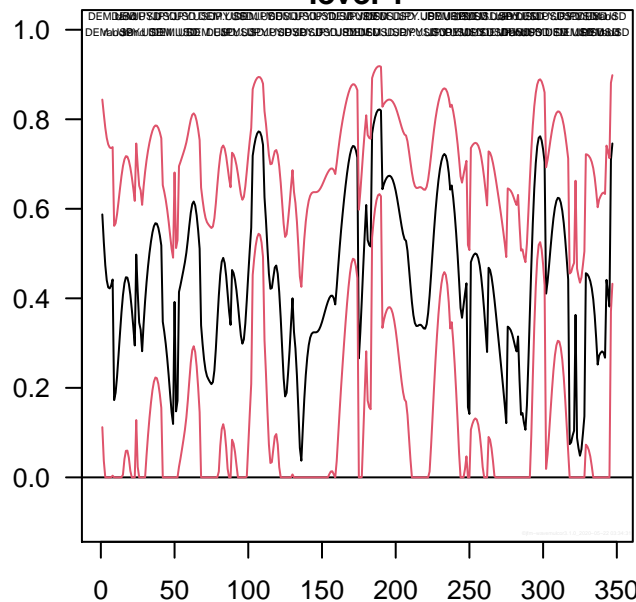
level 3



level 2



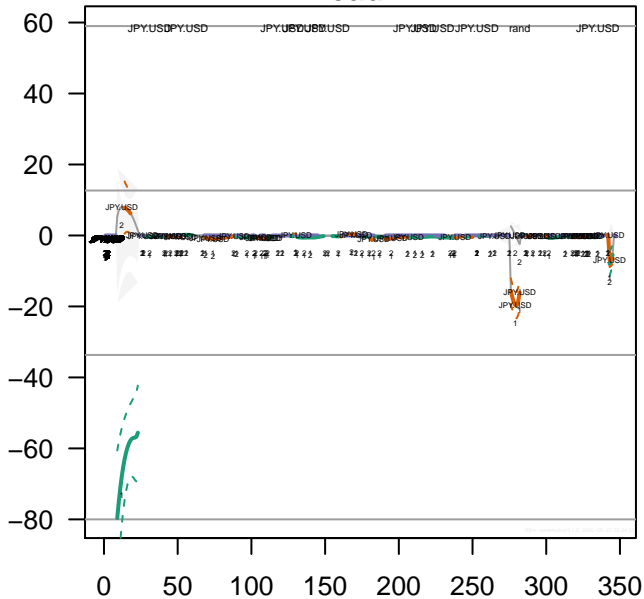
level 1



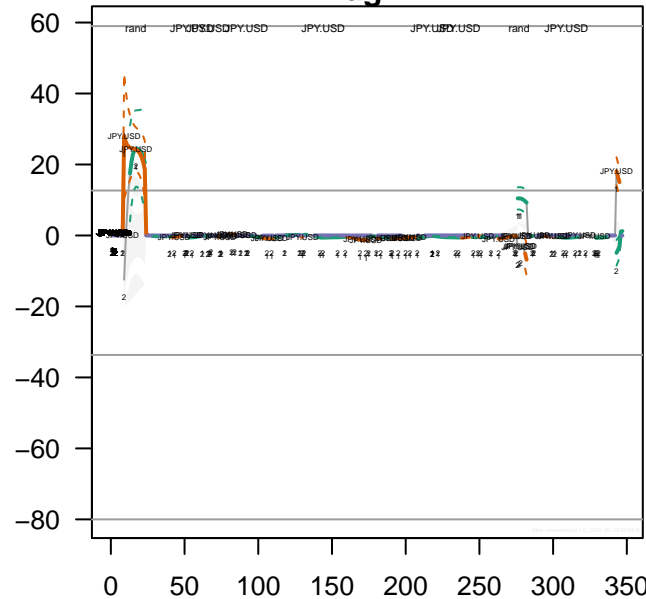
time

level 1

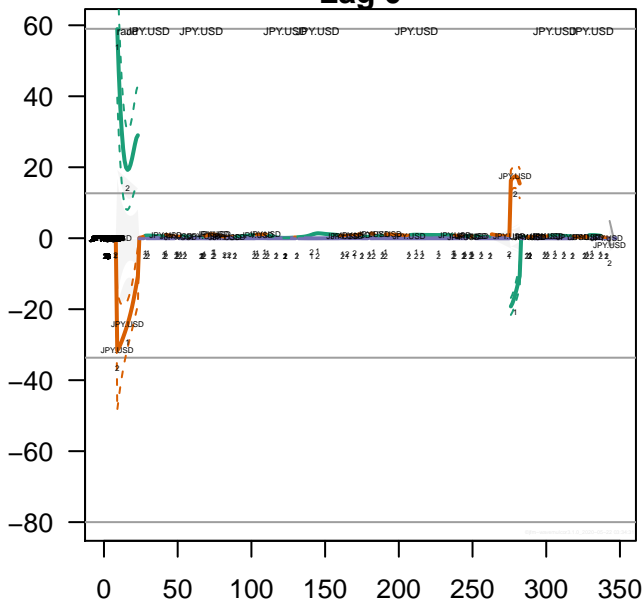
Lead 1



Lag 1



Lag 0



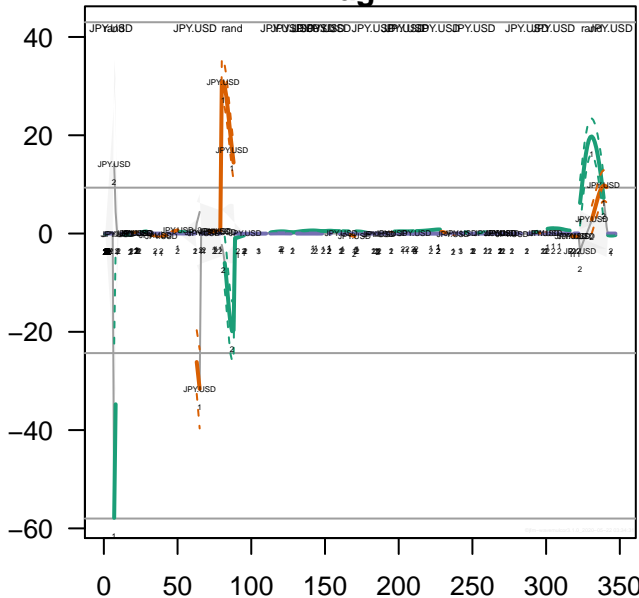
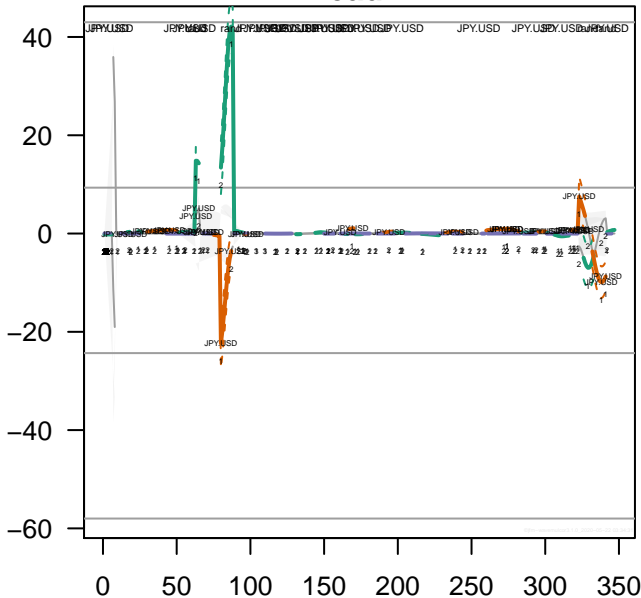
time

level 2

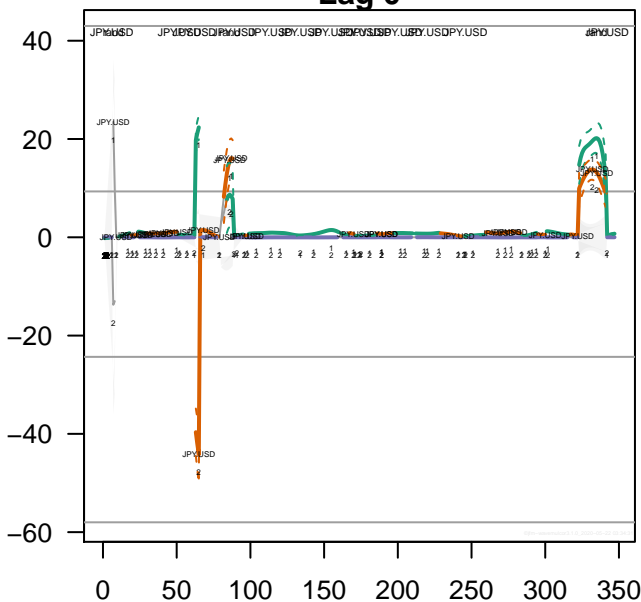
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0



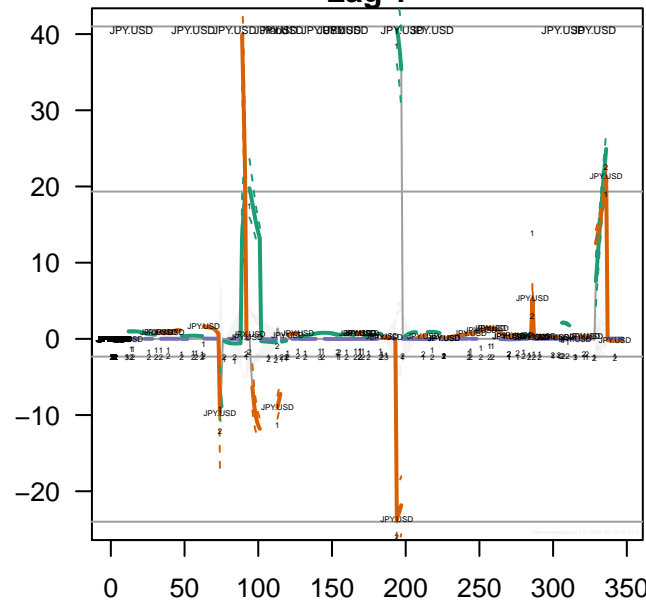
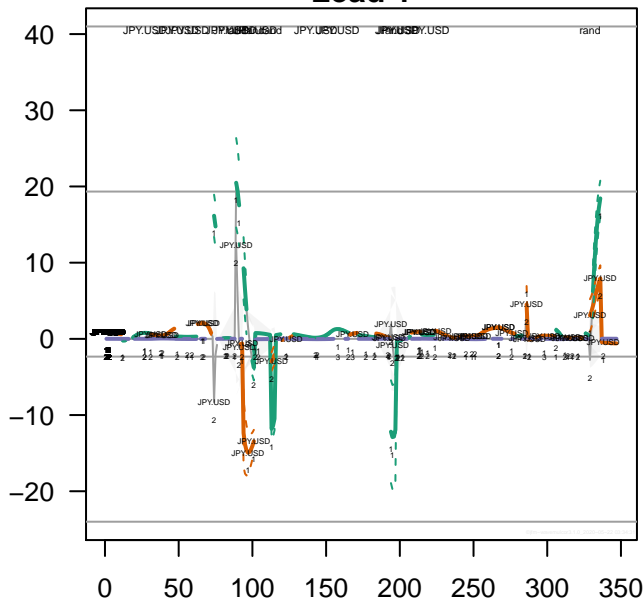
time

level 3

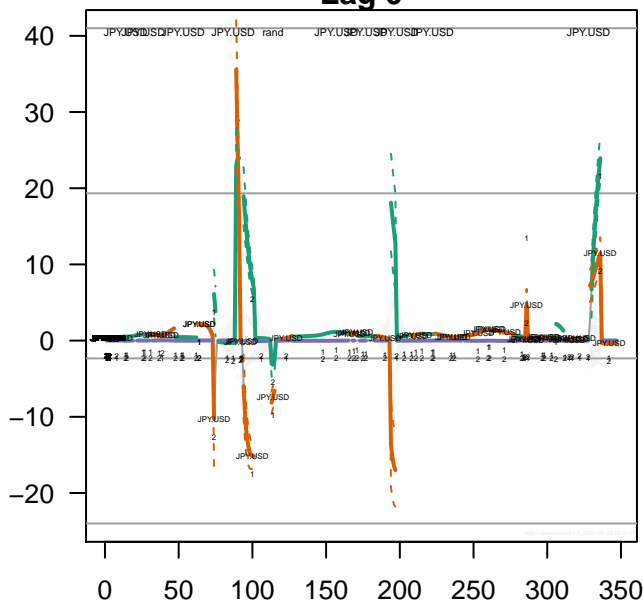
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



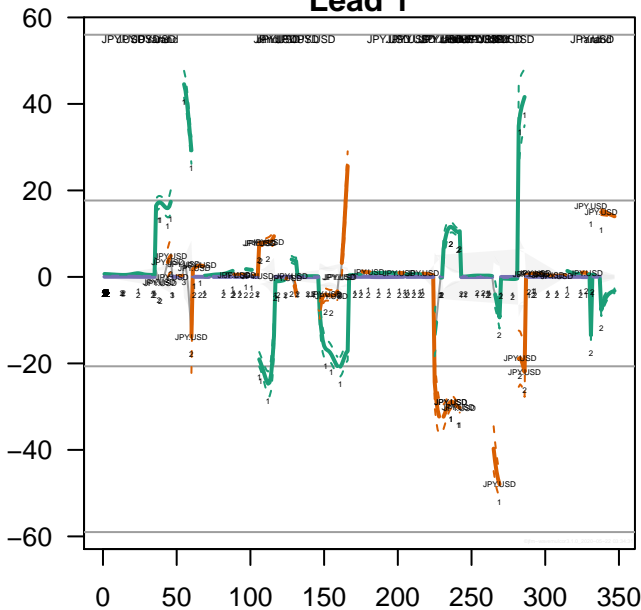
Lag 0



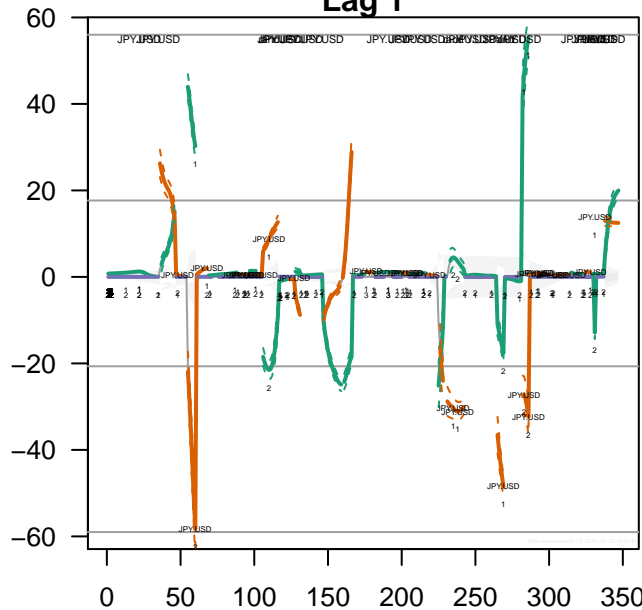
time

s 3

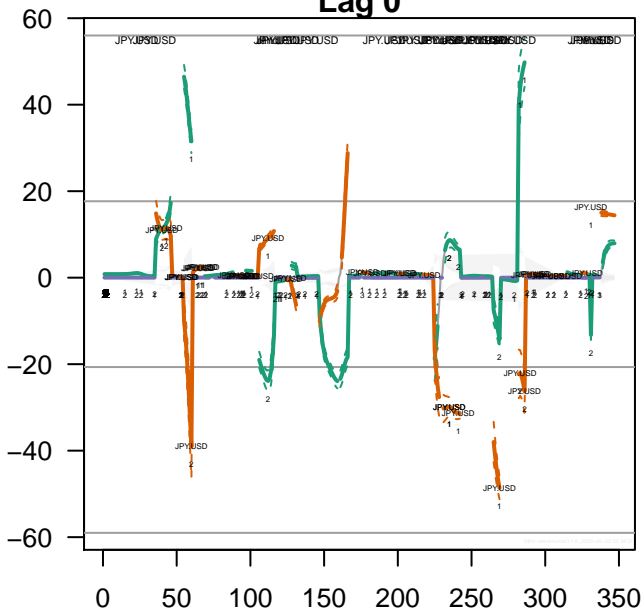
Lead 1



Lag 1



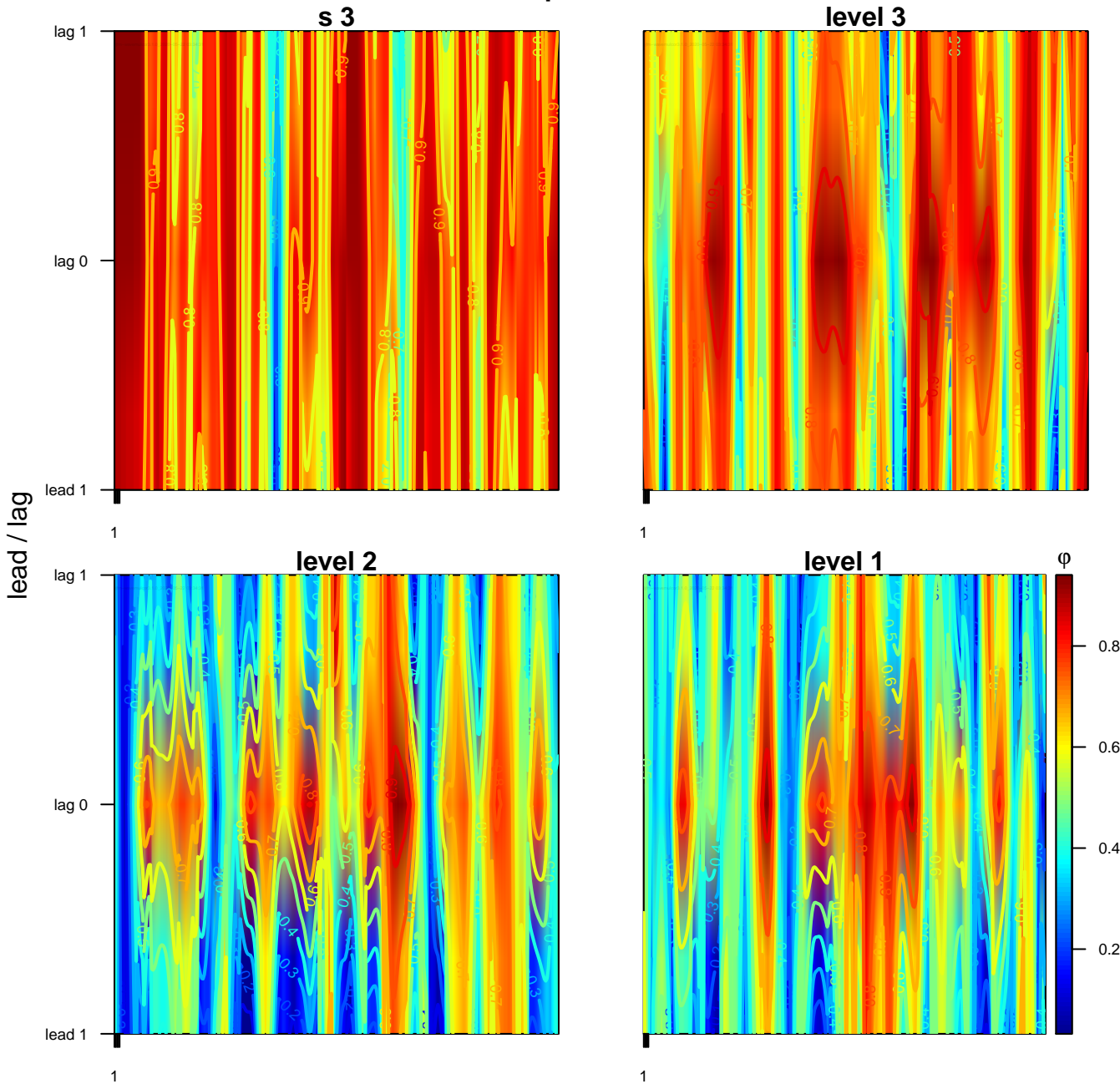
Lag 0



Wavelet Local Multiple Cross-Regression

time

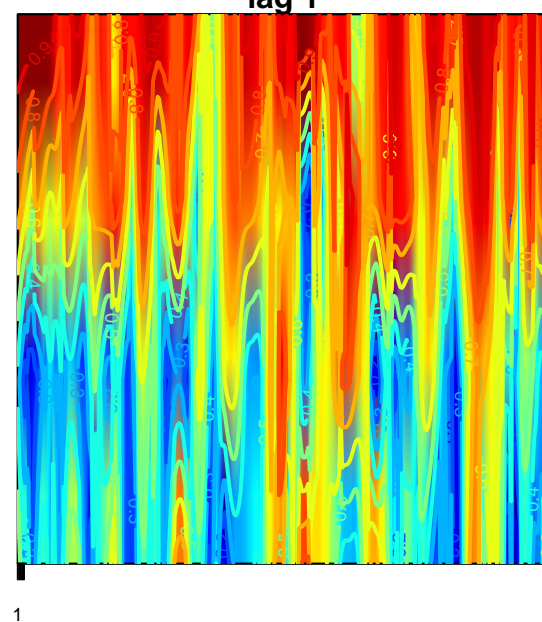
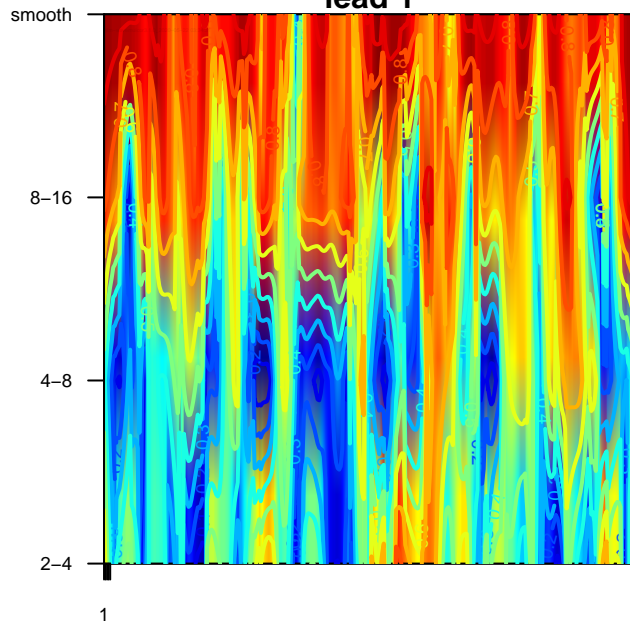
Wavelet Local Multiple Cross-Correlation



Wavelet Local Multiple Cross-Correlation

lead 1

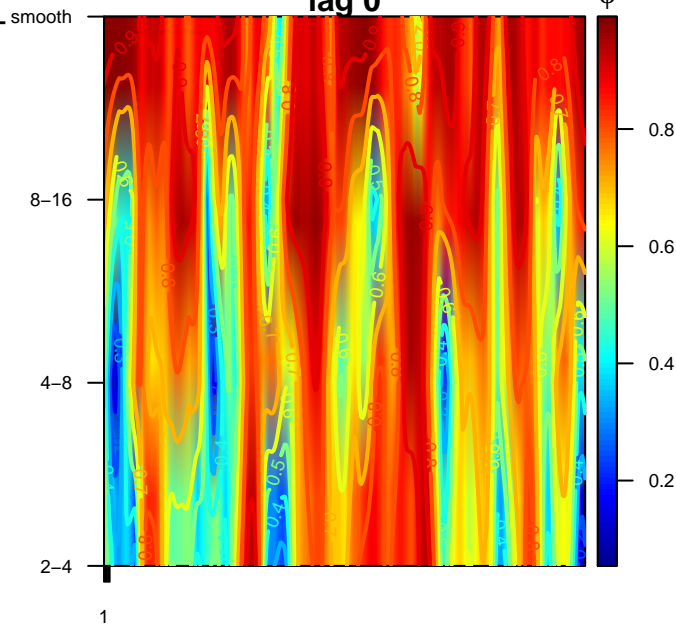
lag 1



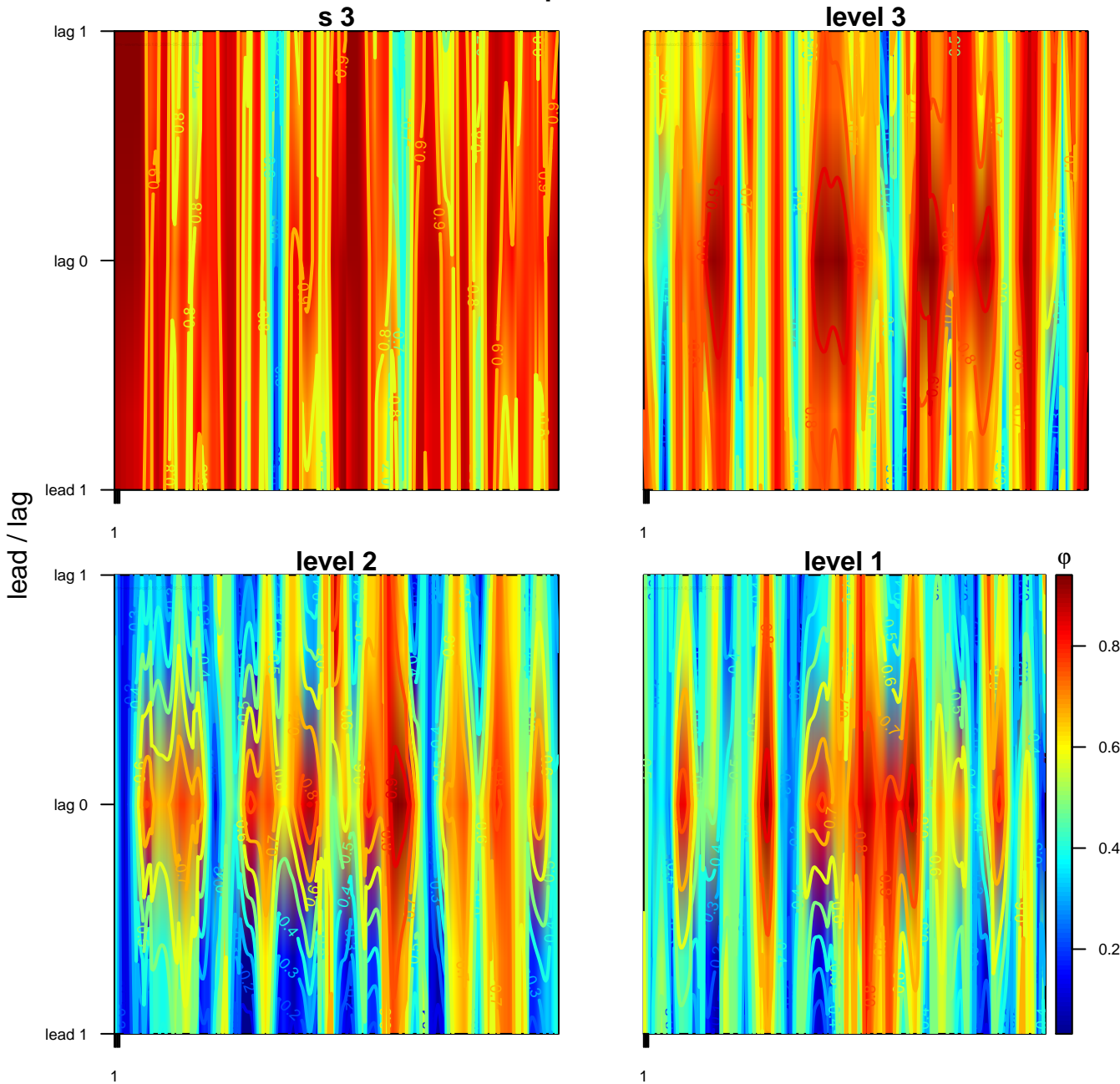
lag 0

ϕ

period



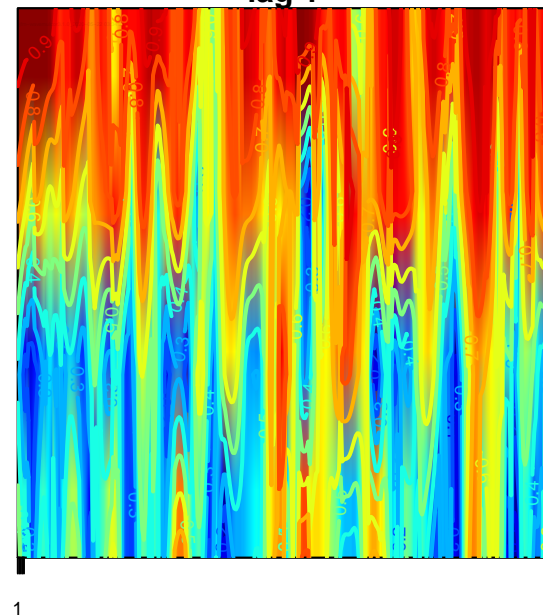
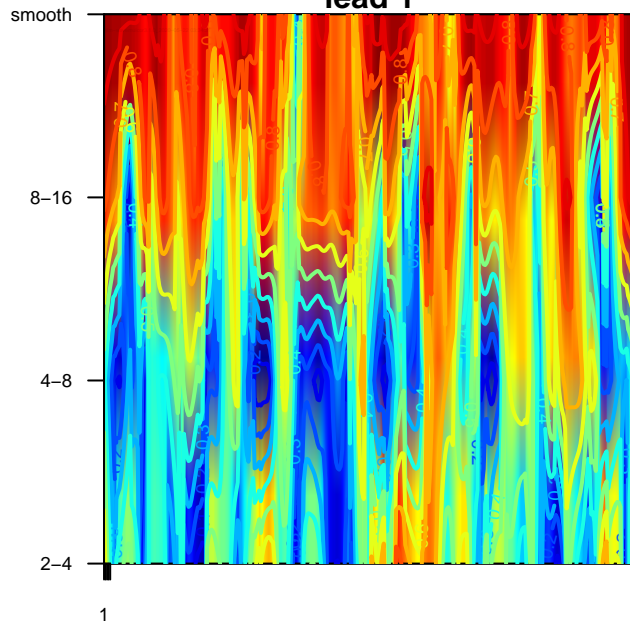
Wavelet Local Multiple Cross-Correlation



Wavelet Local Multiple Cross-Correlation

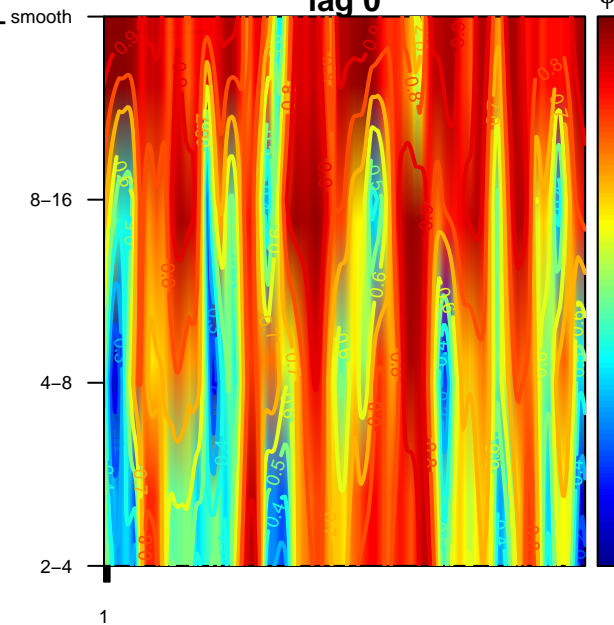
lead 1

lag 1



lag 0

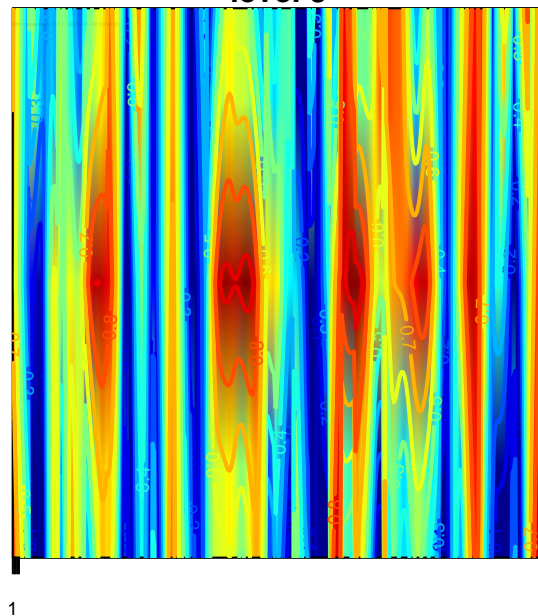
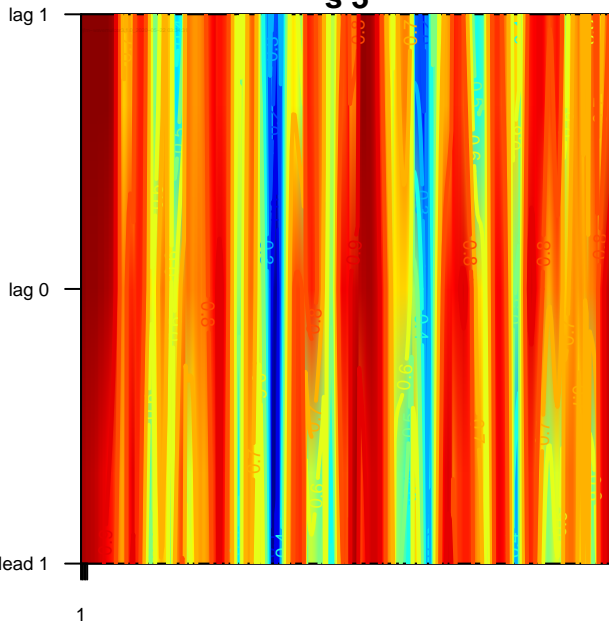
ϕ



Wavelet Local Multiple Cross-Correlation

s 3

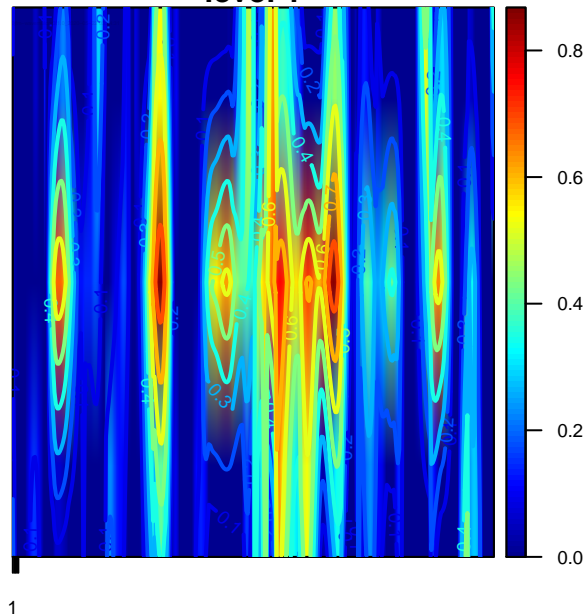
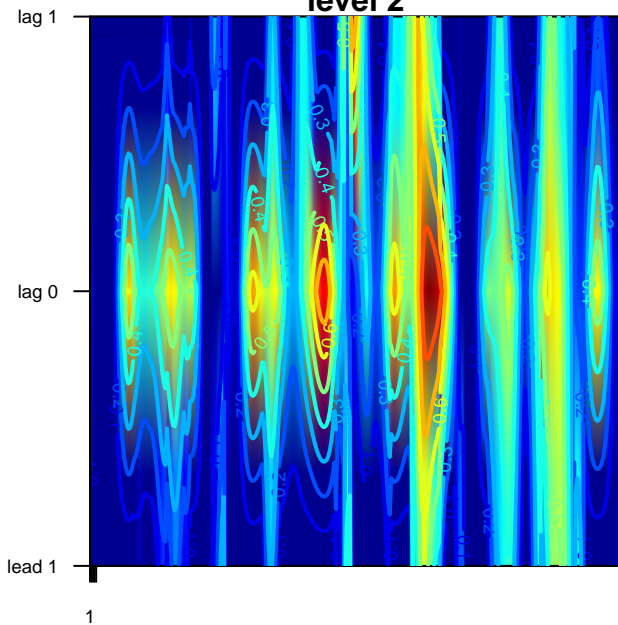
level 3



level 2

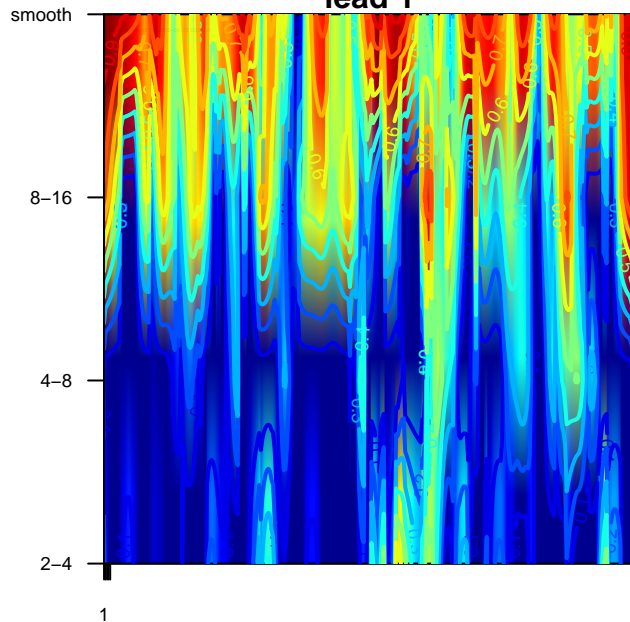
level 1

ϕ

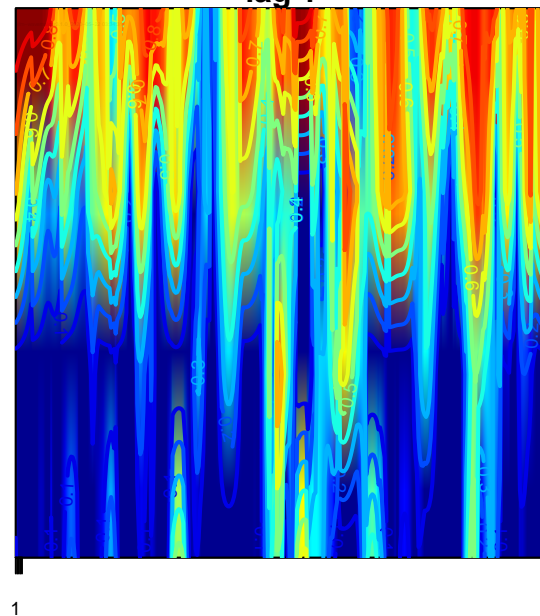


Wavelet Local Multiple Cross-Correlation

lead 1

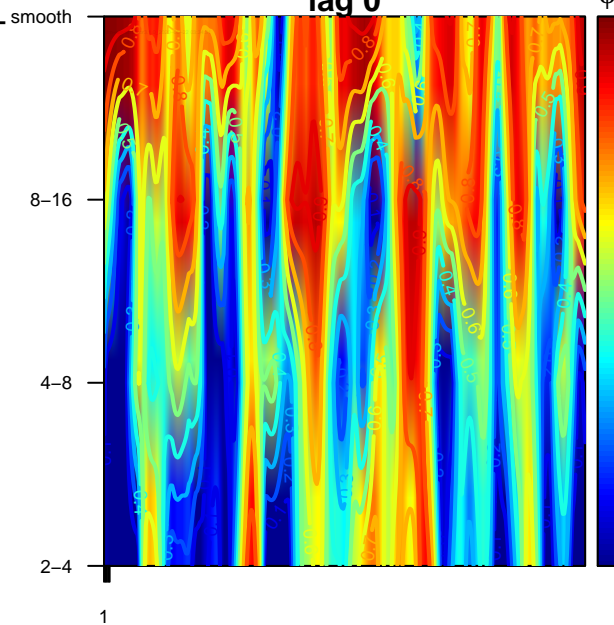


lag 1



lag 0

period

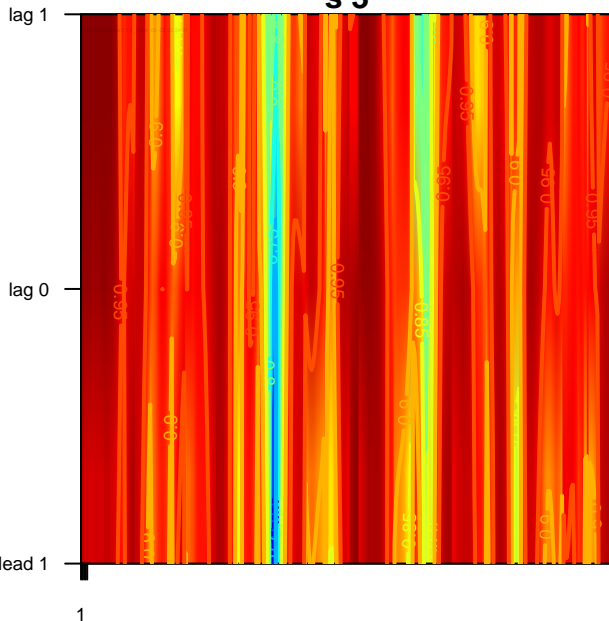


ϕ

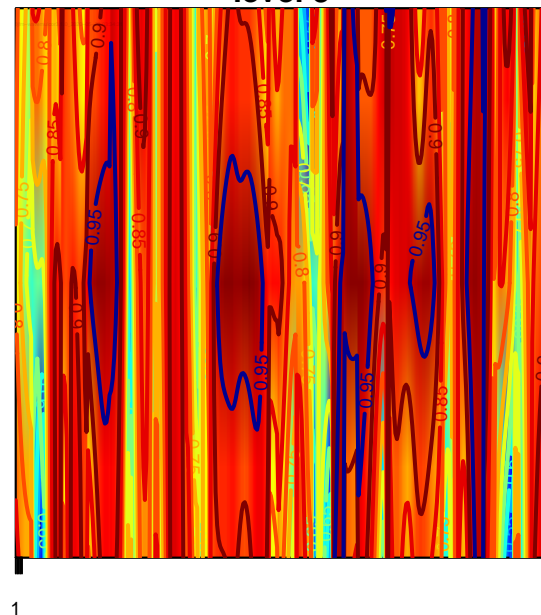


Wavelet Local Multiple Cross-Correlation

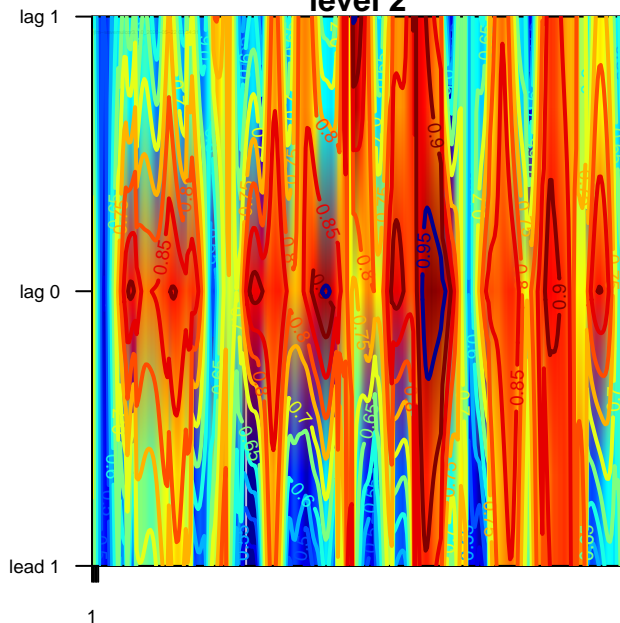
s 3



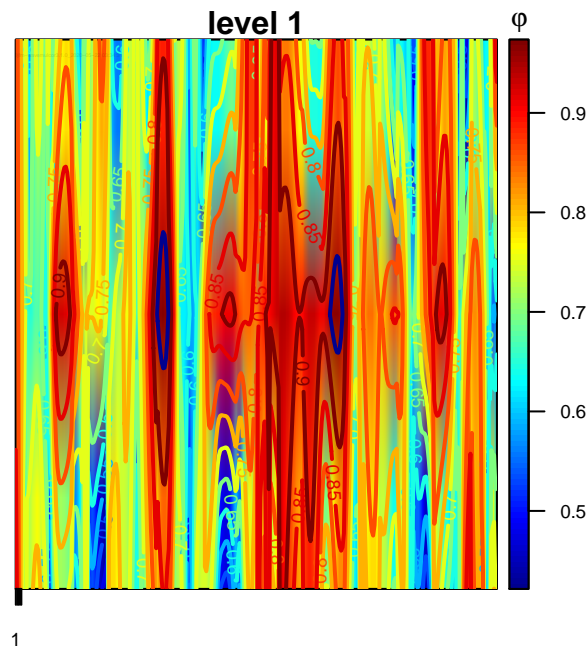
level 3



level 2



level 1

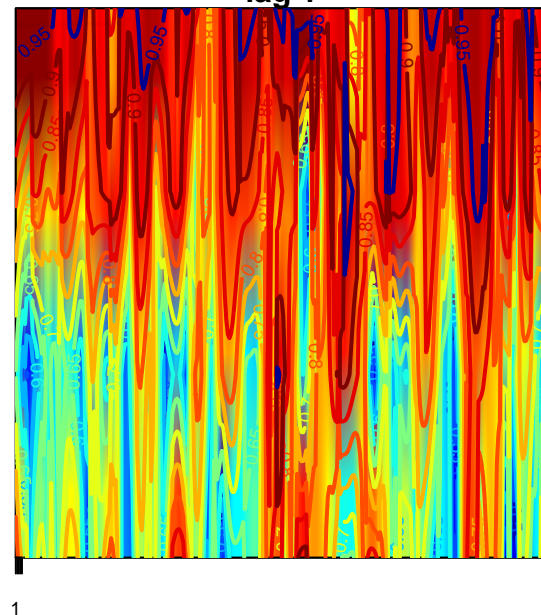
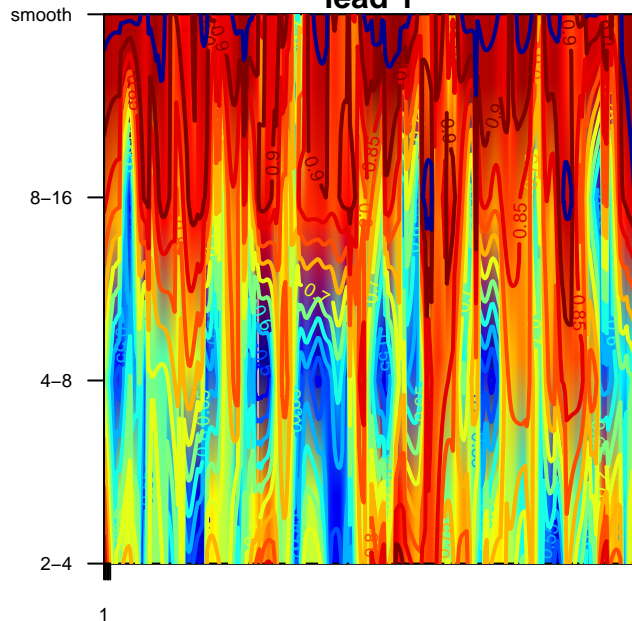


ϕ

Wavelet Local Multiple Cross-Correlation

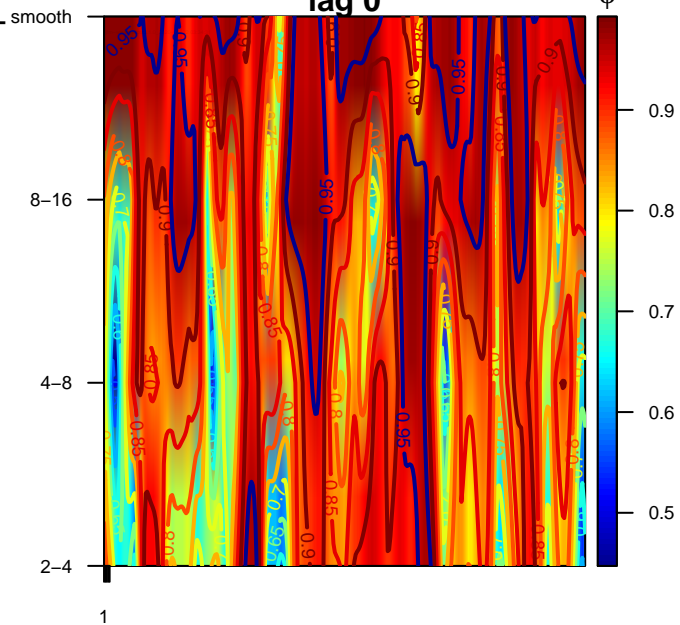
lead 1

lag 1



lag 0

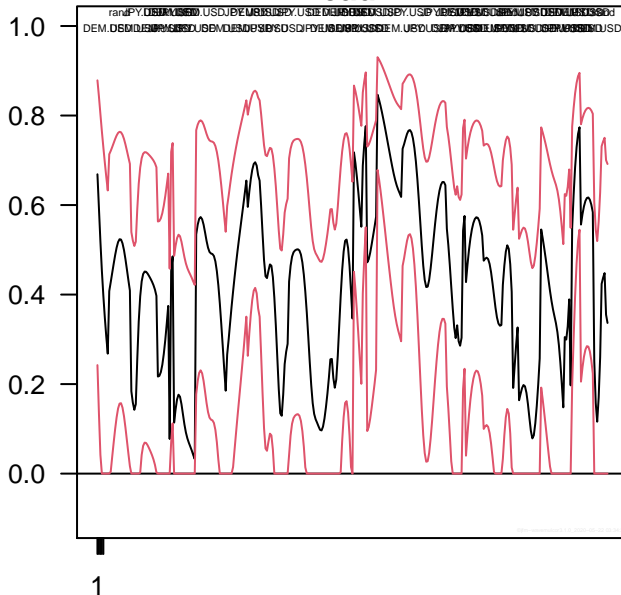
ϕ



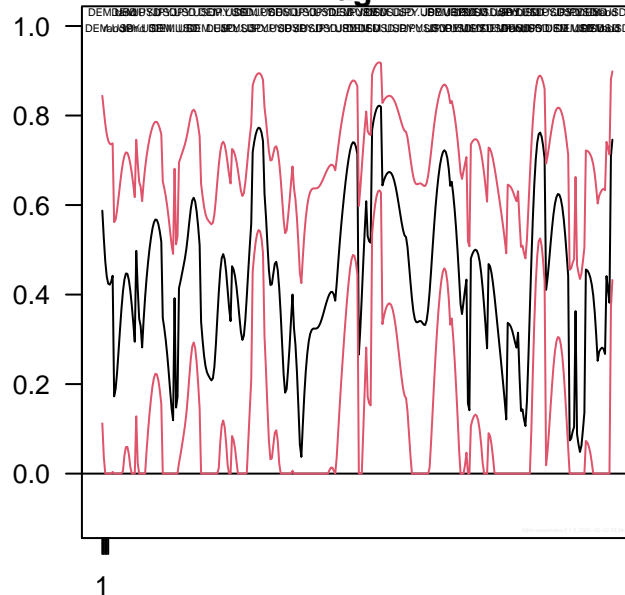
Wavelet Local Multiple Cross-Correlation

level 1

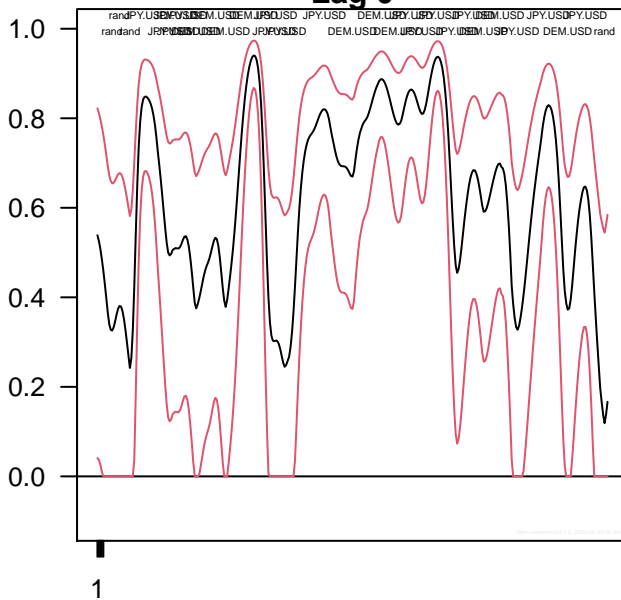
Lead 1



Lag 1

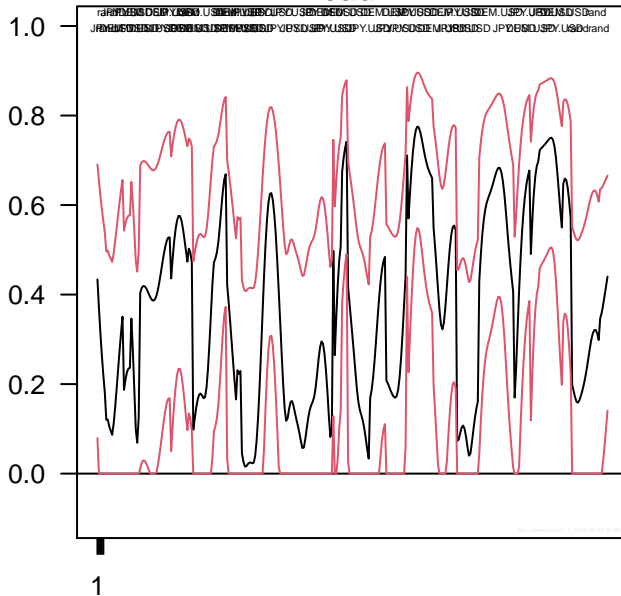


Lag 0

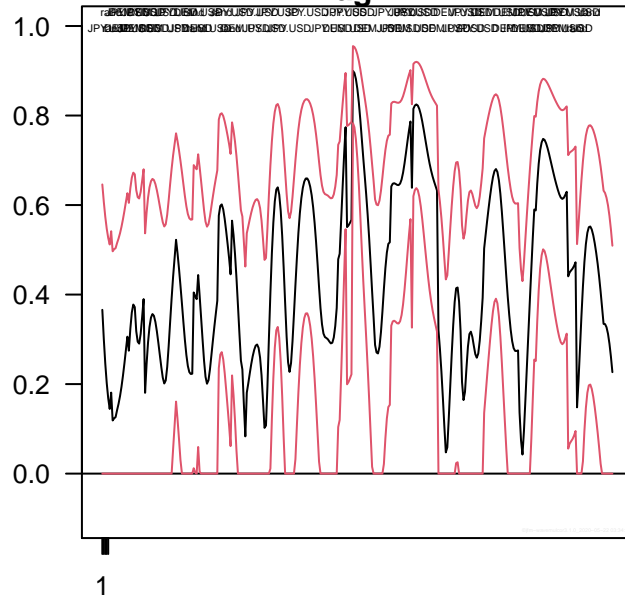


time

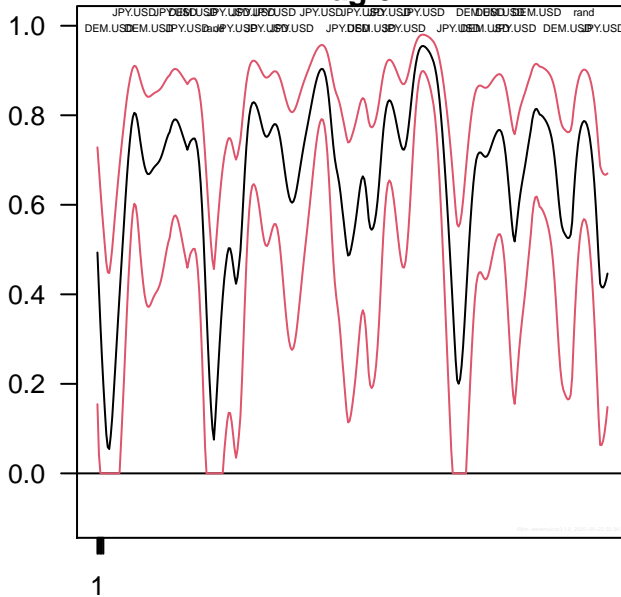
Lead 1



Lag 1



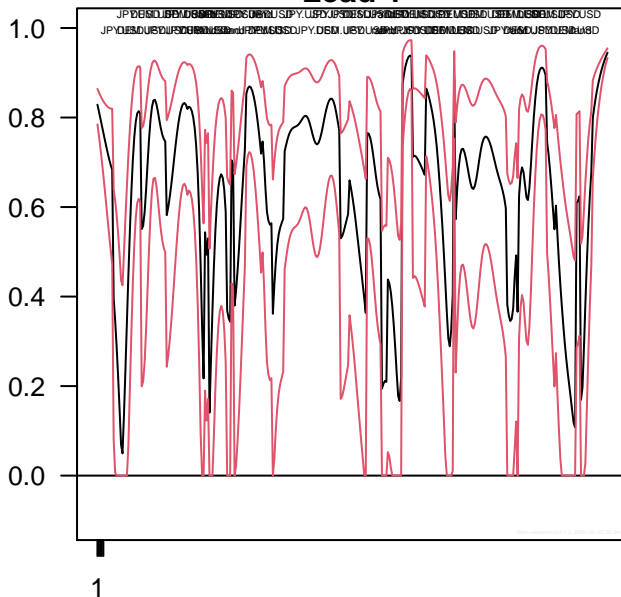
Lag 0



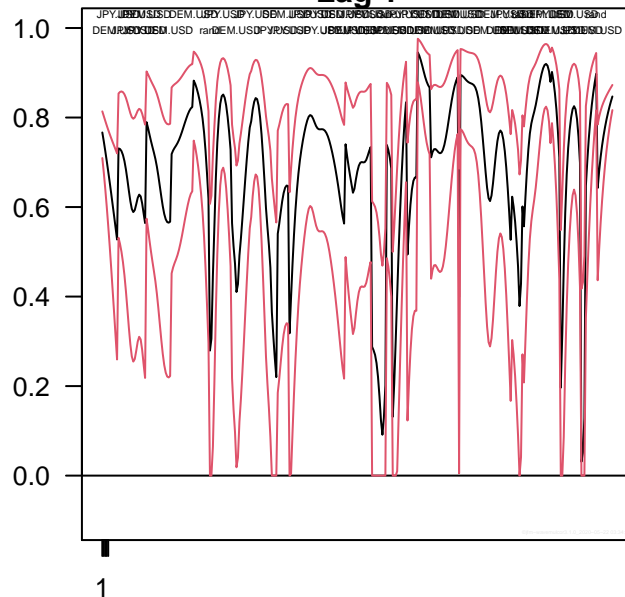
Wavelet Local Multiple Cross-Correlation

level 3

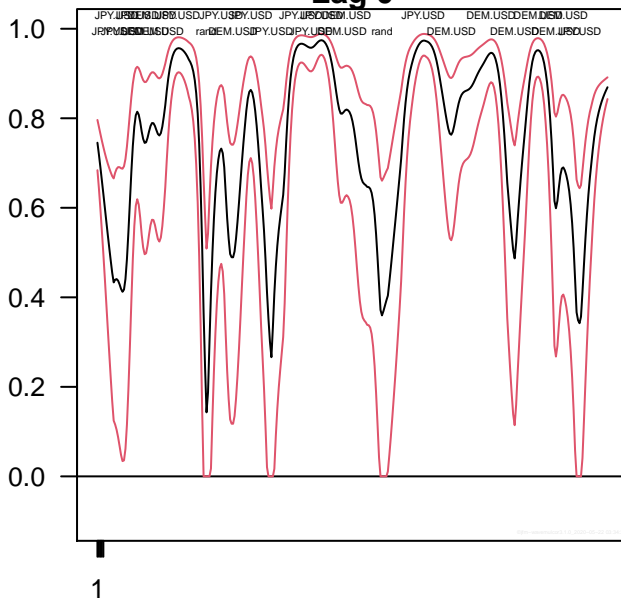
Lead 1



Lag 1



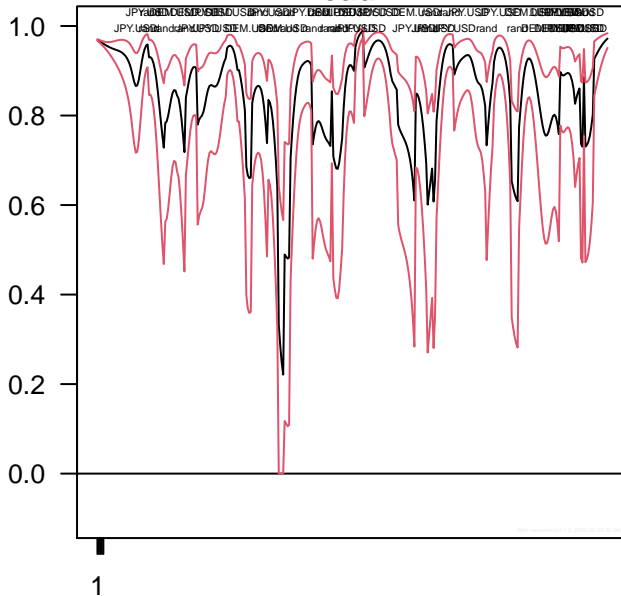
Lag 0



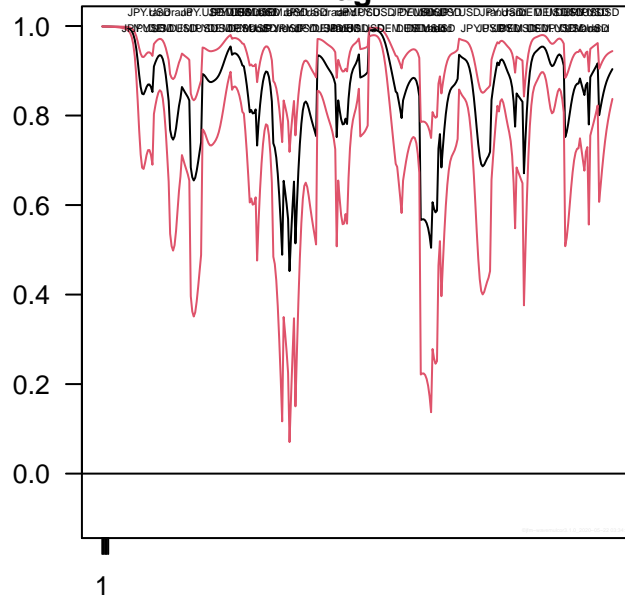
time

s 3

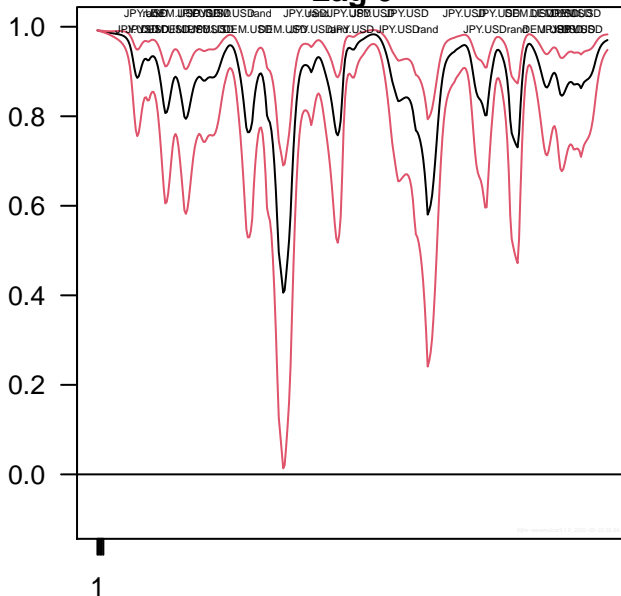
Lead 1



Lag 1



Lag 0



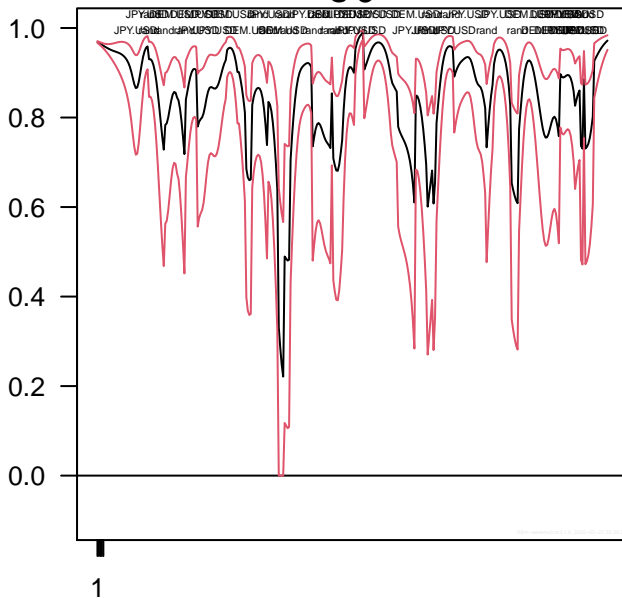
time

Wavelet Local Multiple Cross-Correlation

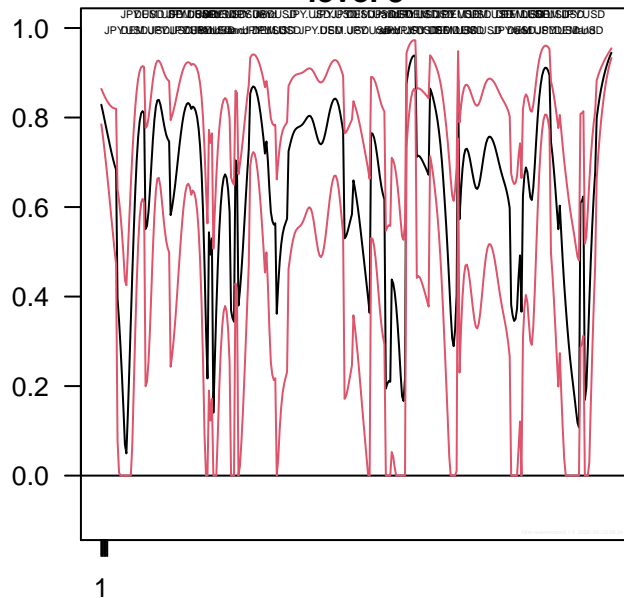
Wavelet Local Multiple Cross-Correlation

Lead 1

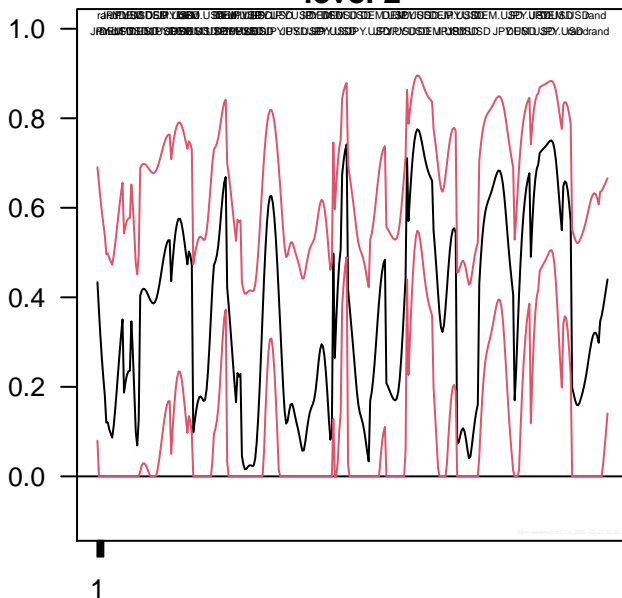
s 3



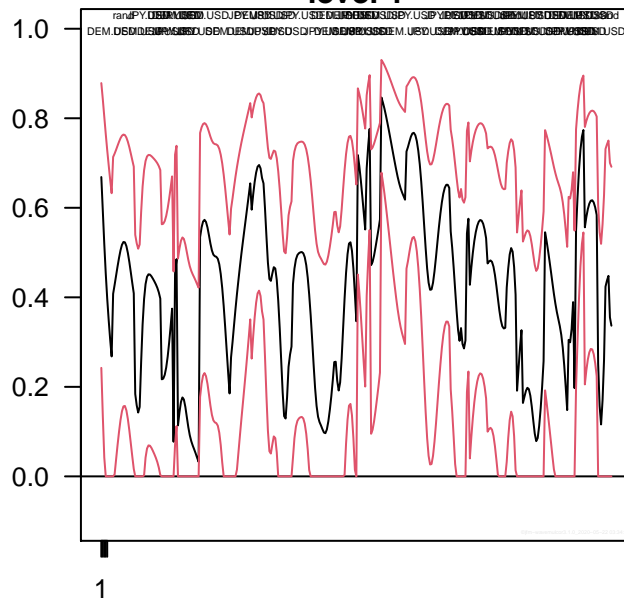
level 3



level 2

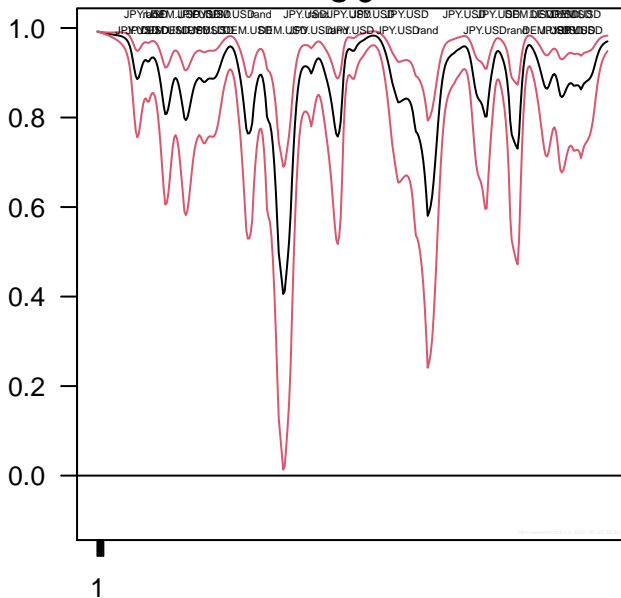


level 1

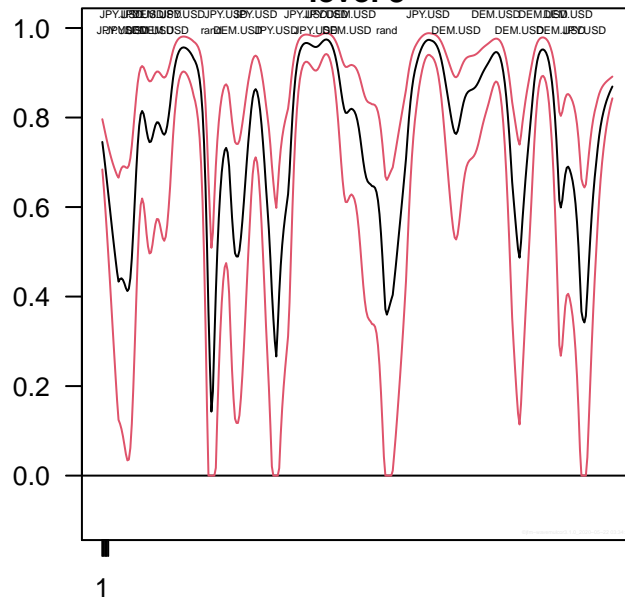


time

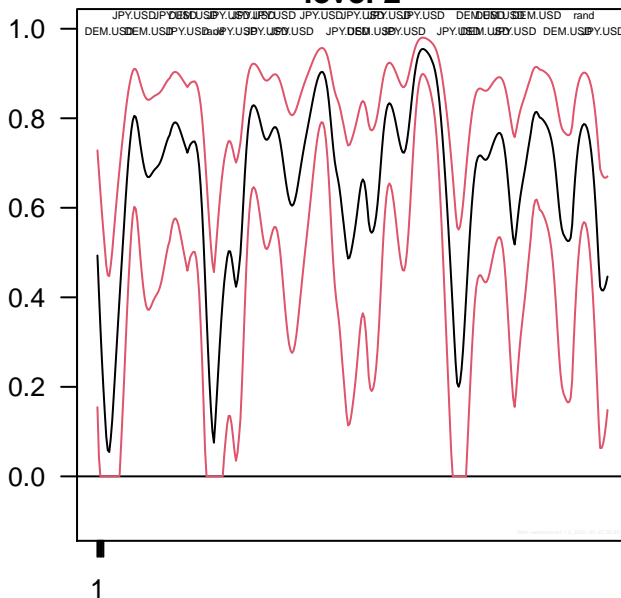
s 3



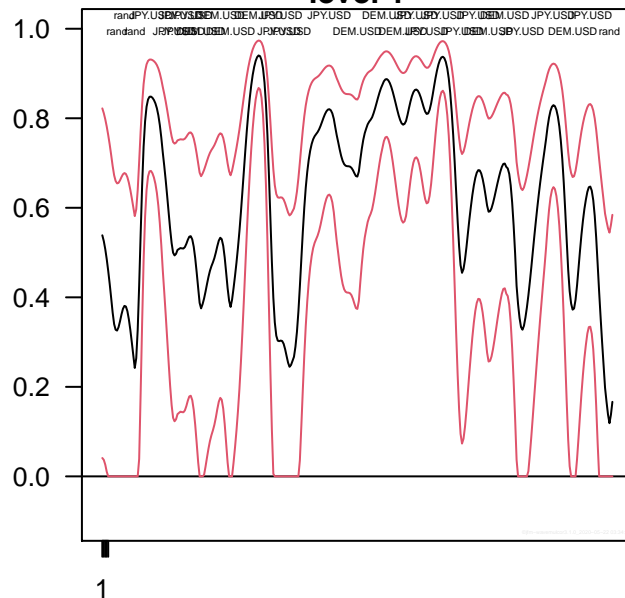
level 3



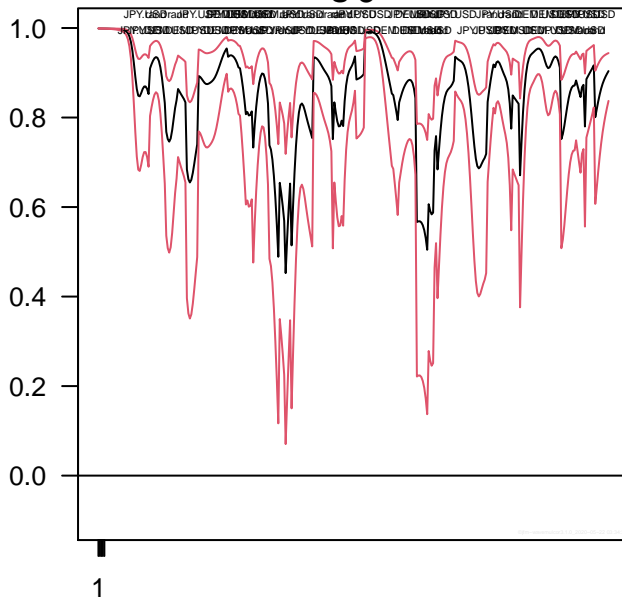
level 2



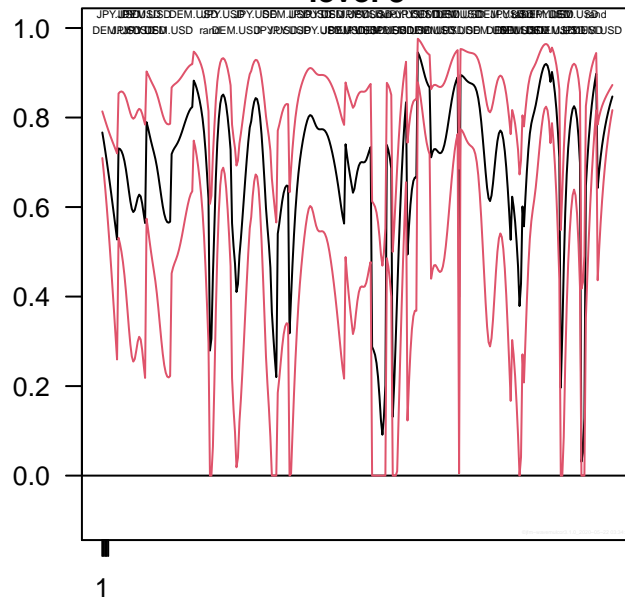
level 1



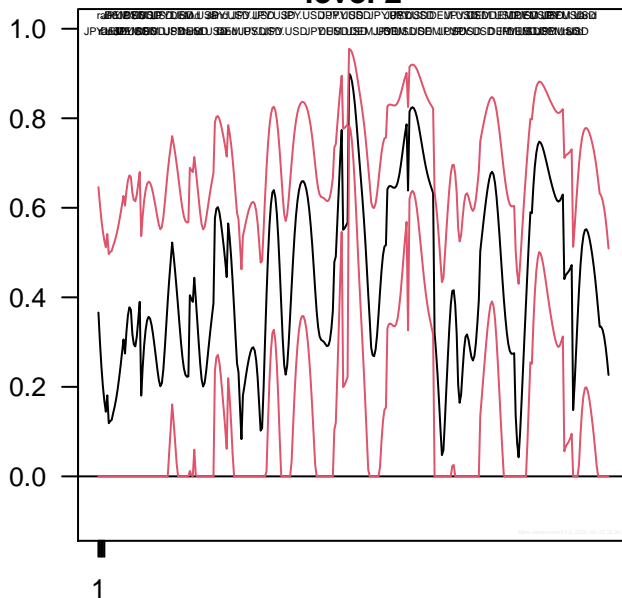
s 3



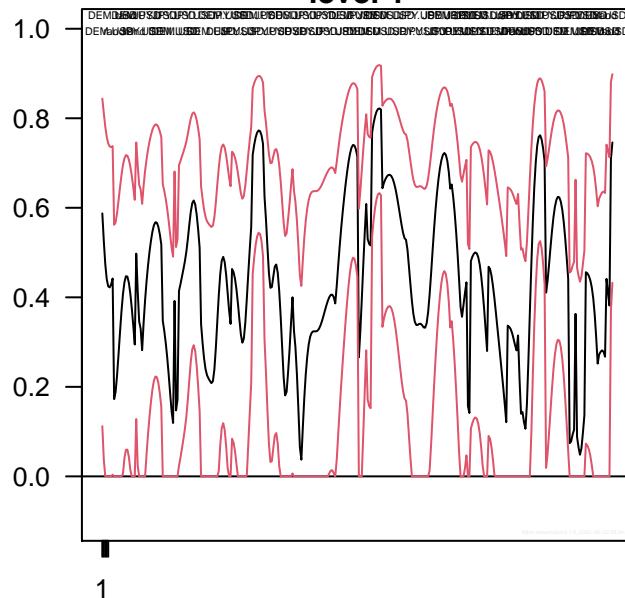
level 3



level 2



level 1

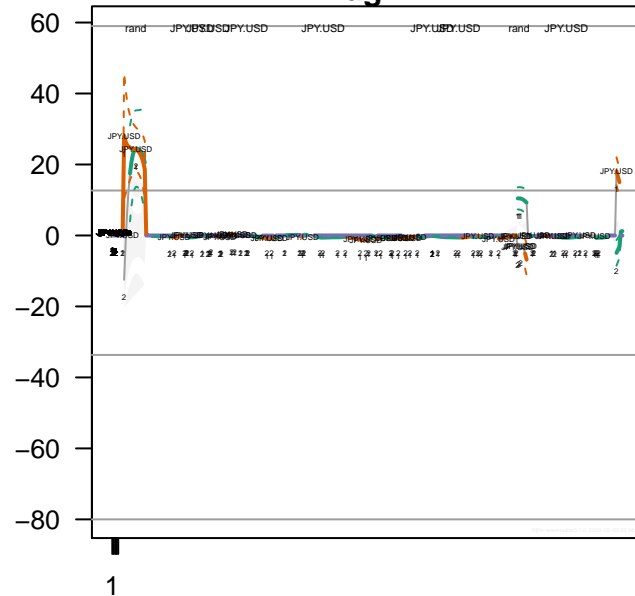
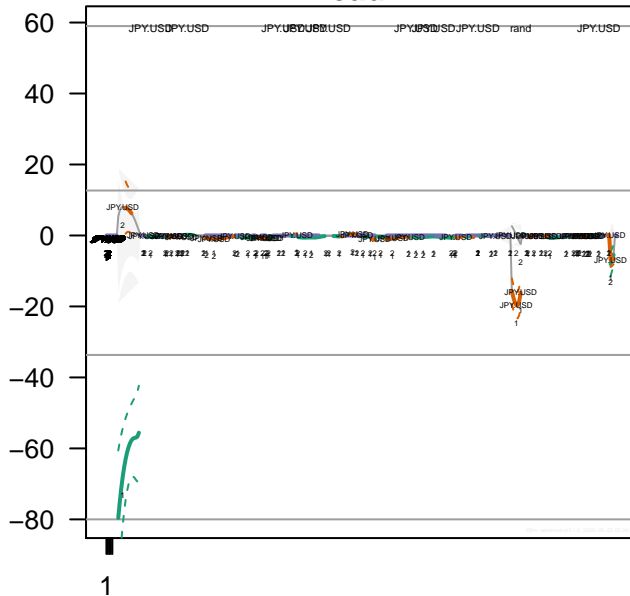


time

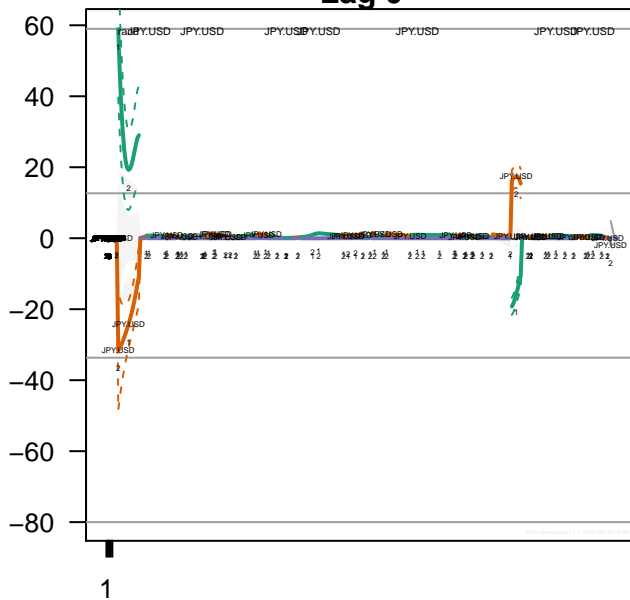
level 1

Lead 1

Lag 1



Lag 0



time

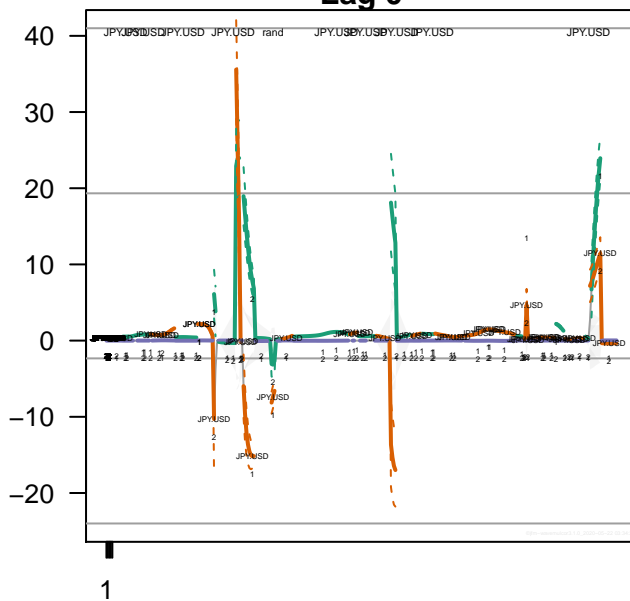
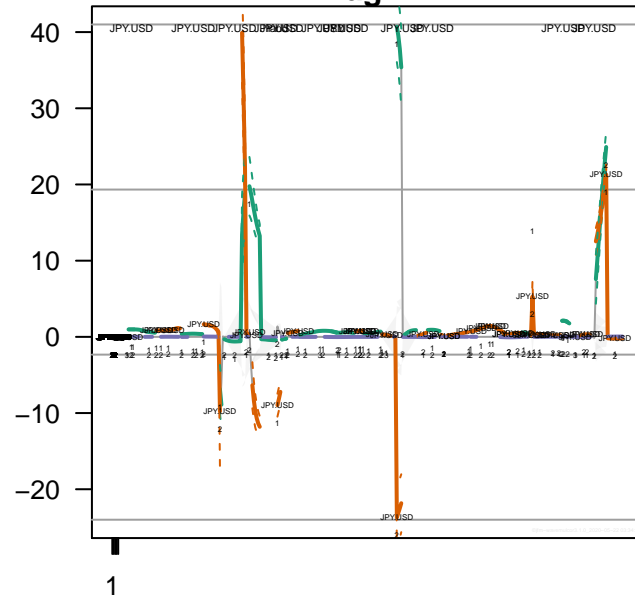
time

Lag 1

Lag 1

Lag 0

Wavelet Local Multiple Cross-Regression

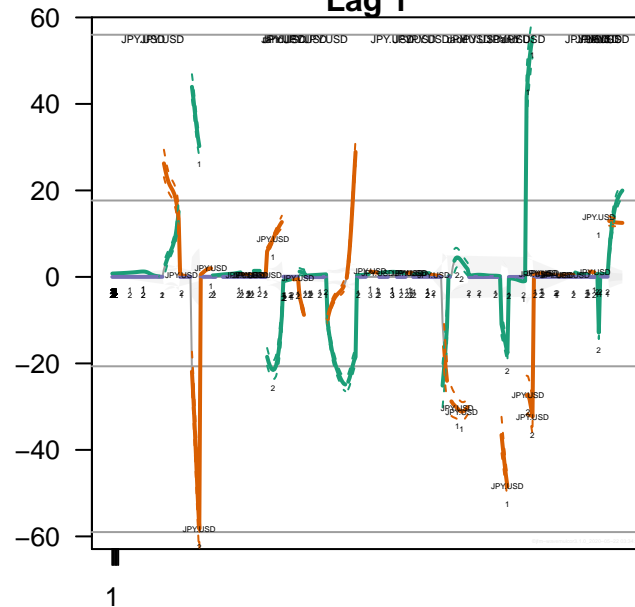
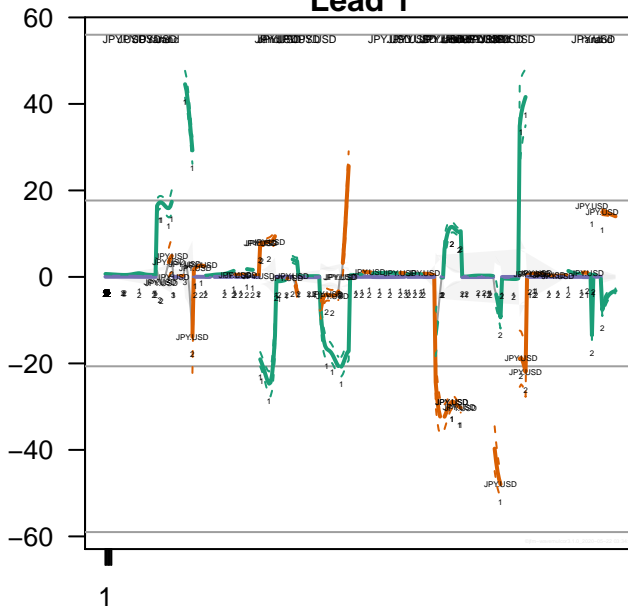


s 3

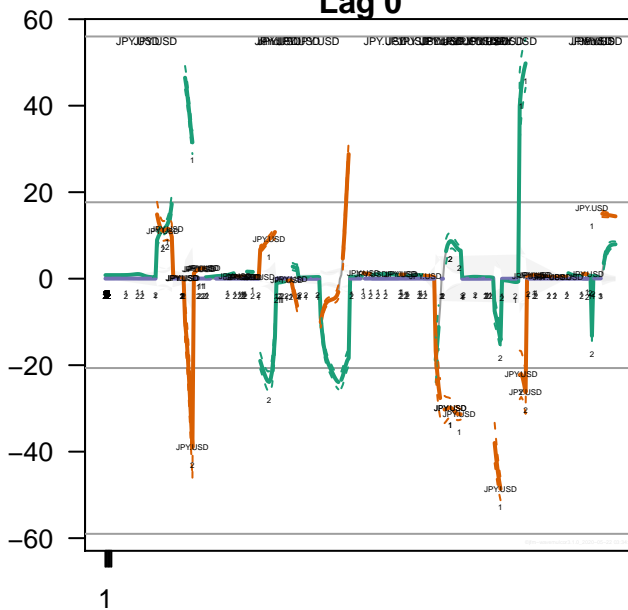
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0



time

Wavelet Local Multiple Cross-Correlation

s 1

level 1

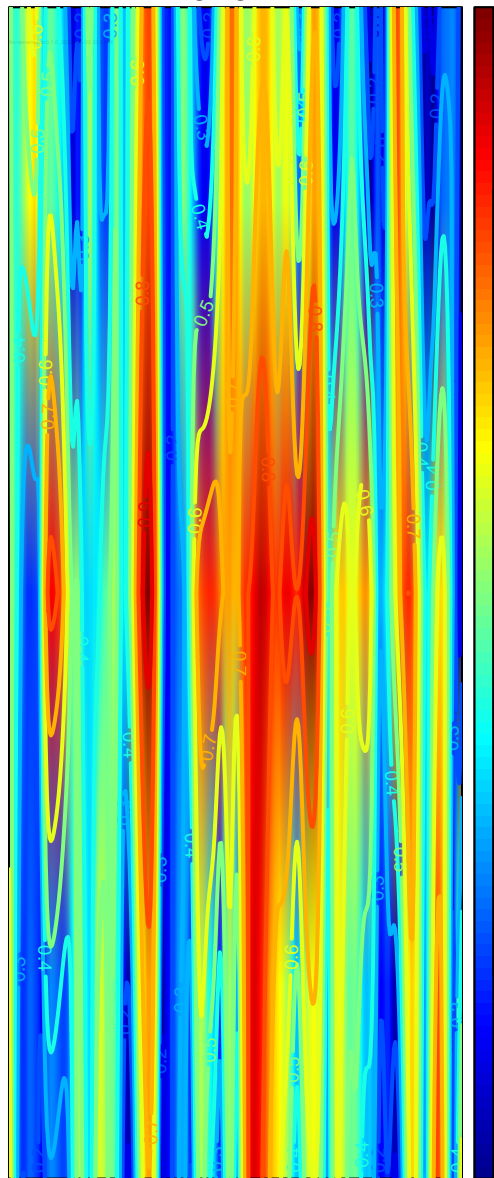
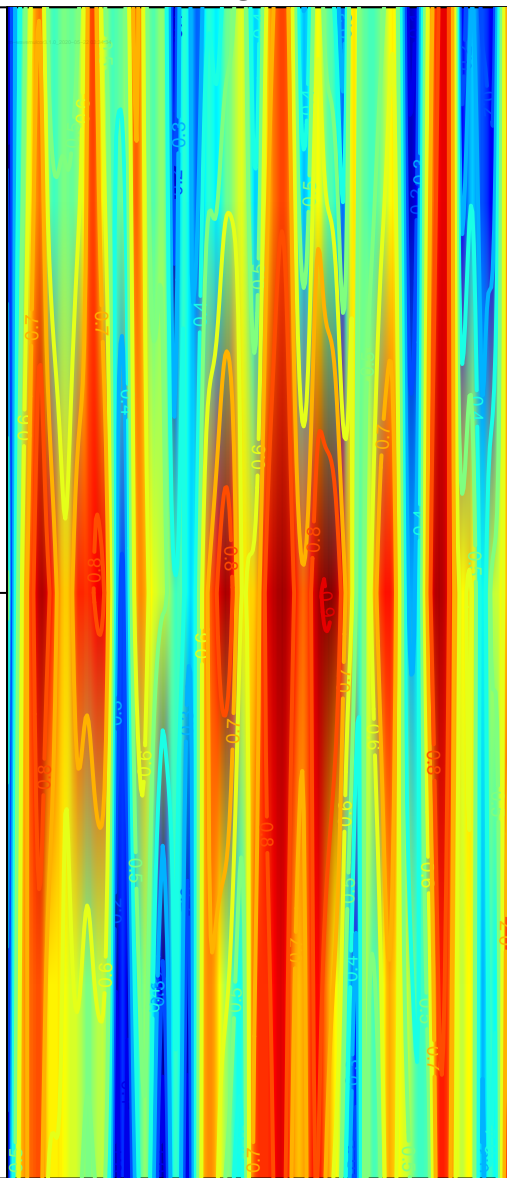
ϕ

lag 1

lag 0

lead 1

lead / lag



0.8

0.6

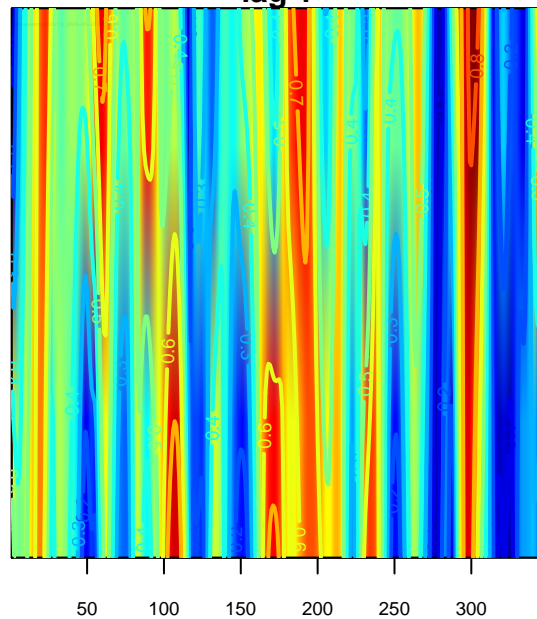
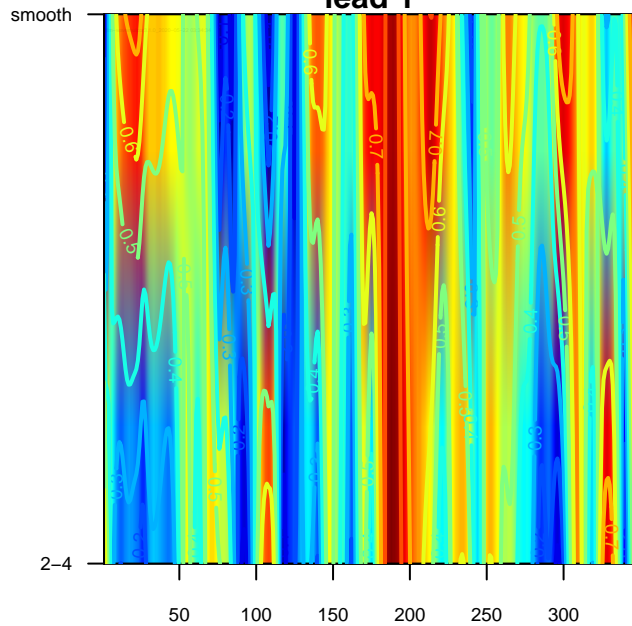
0.4

0.2

Wavelet Local Multiple Cross-Correlation

lead 1

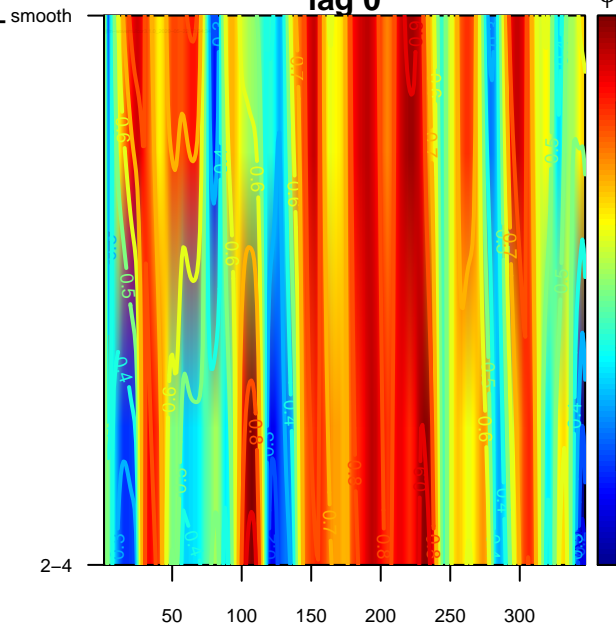
lag 1



lag 0

ϕ

period



0.8

0.6

0.4

0.2

Wavelet Local Multiple Cross-Correlation

s 1

level 1

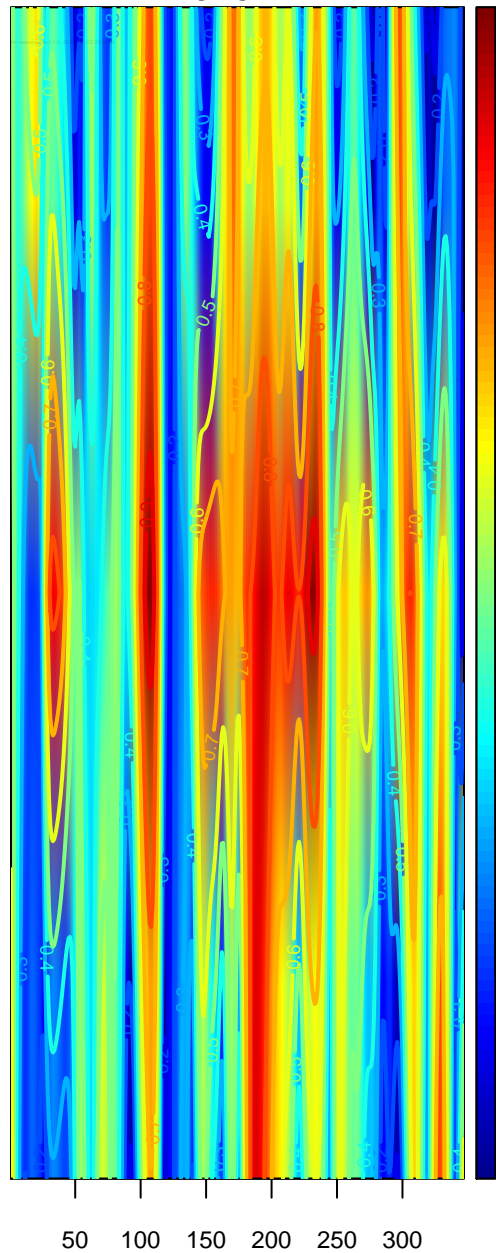
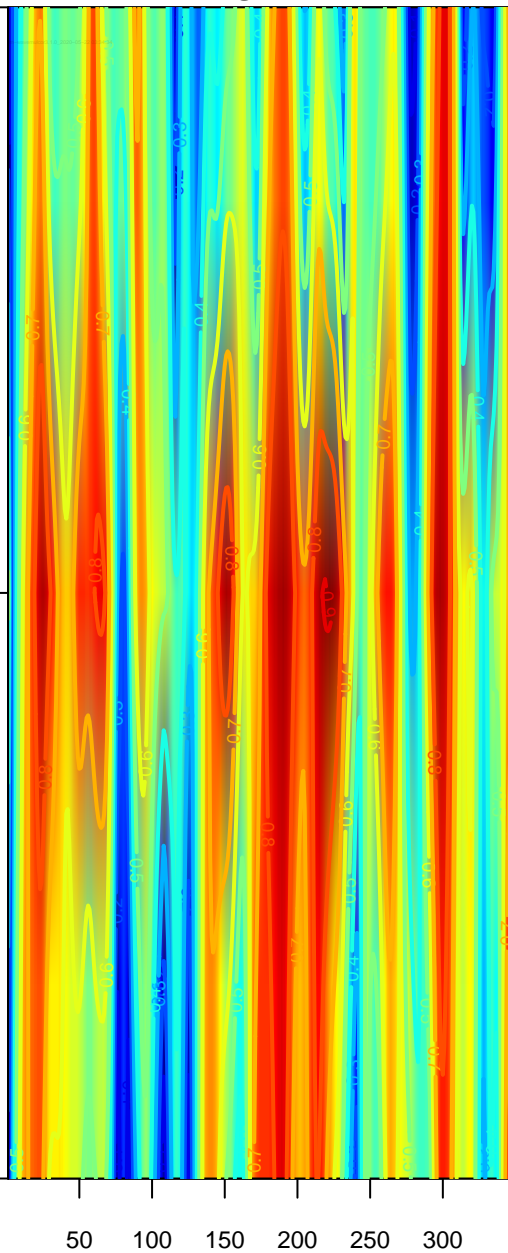
ϕ

lag 1

lag 0

lead 1

lead / lag



0.8

0.6

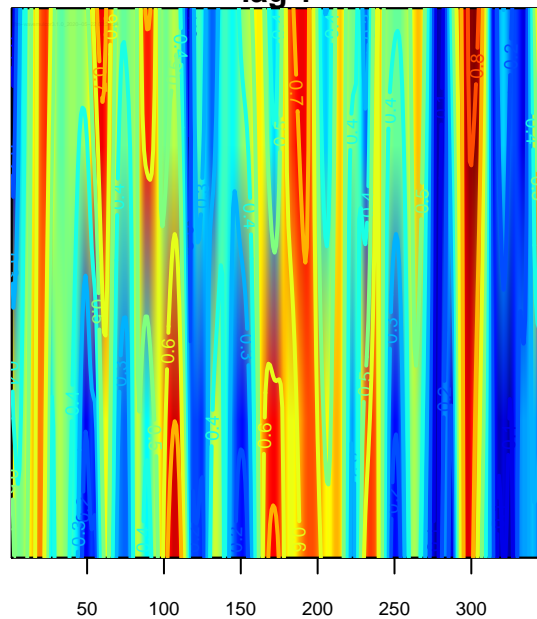
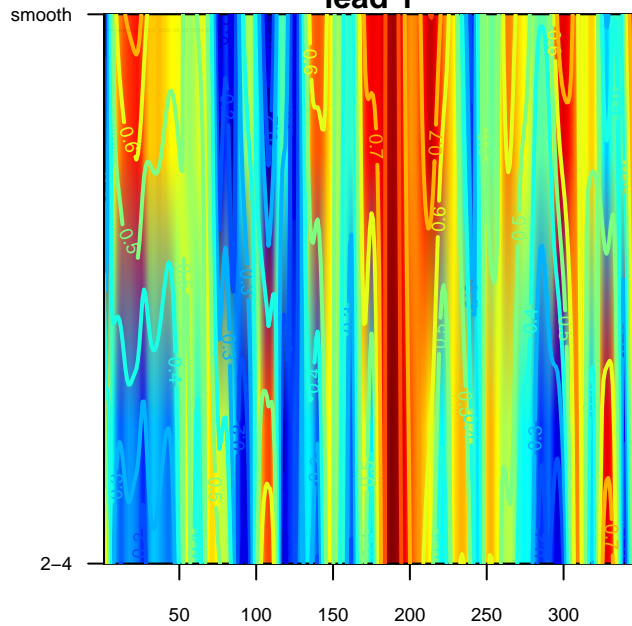
0.4

0.2

Wavelet Local Multiple Cross-Correlation

lead 1

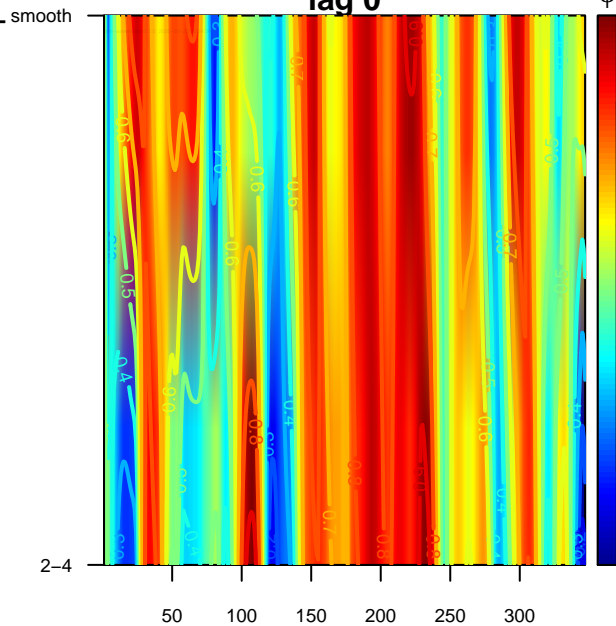
lag 1



lag 0

ϕ

period



0.8

0.6

0.4

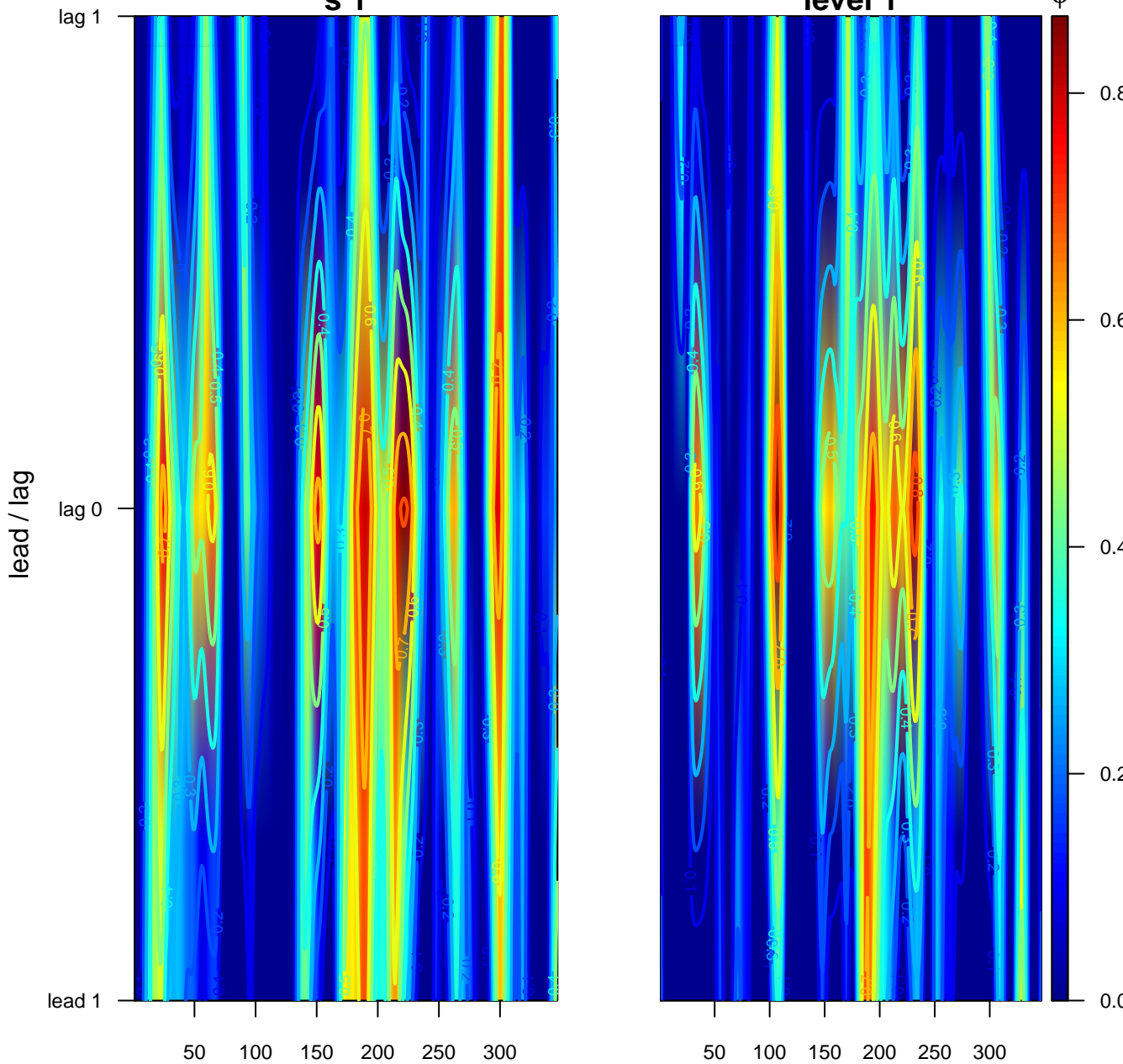
0.2

Wavelet Local Multiple Cross-Correlation

s 1

level 1

ϕ



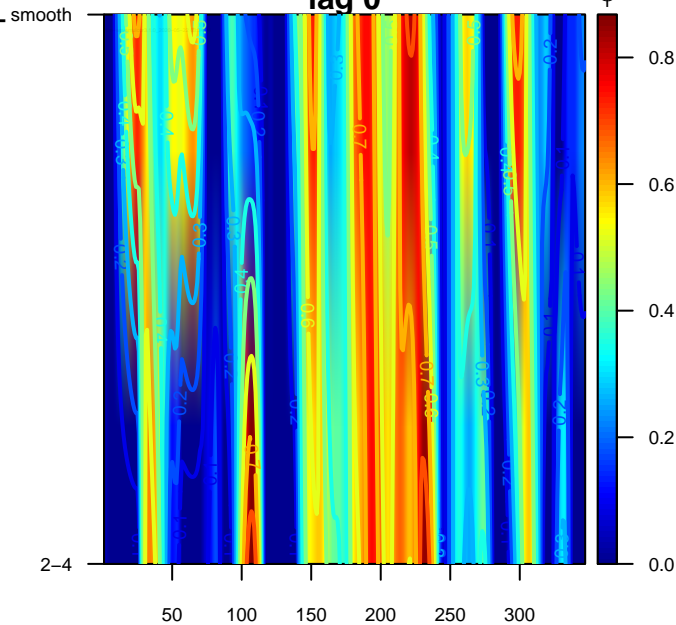
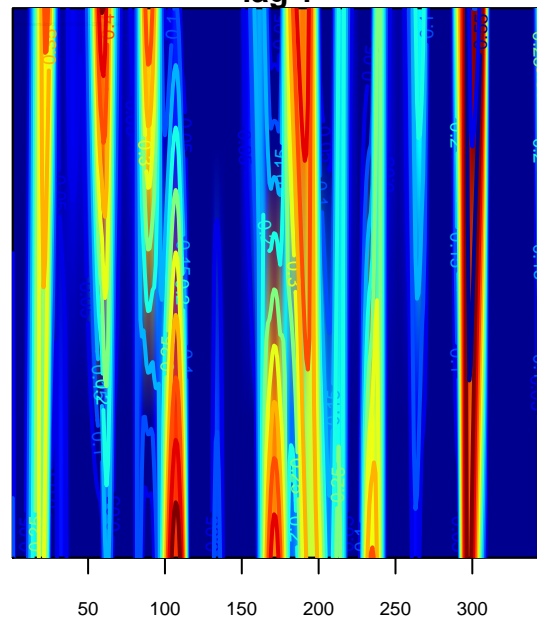
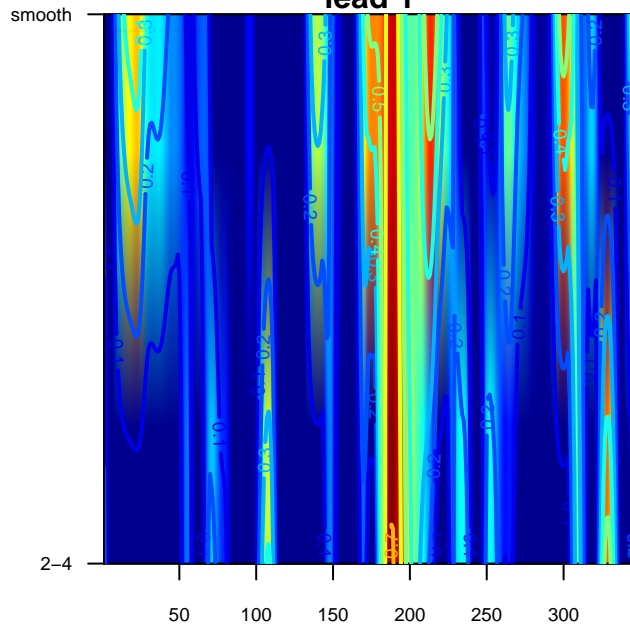
Wavelet Local Multiple Cross-Correlation

lead 1

lag 1

lag 0

ϕ

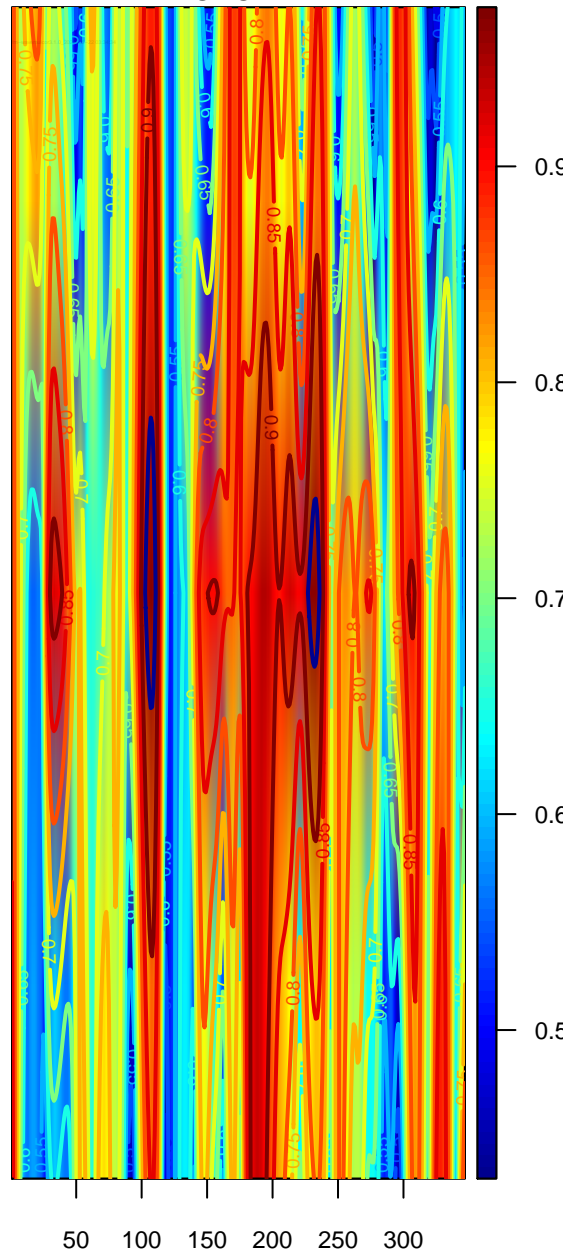
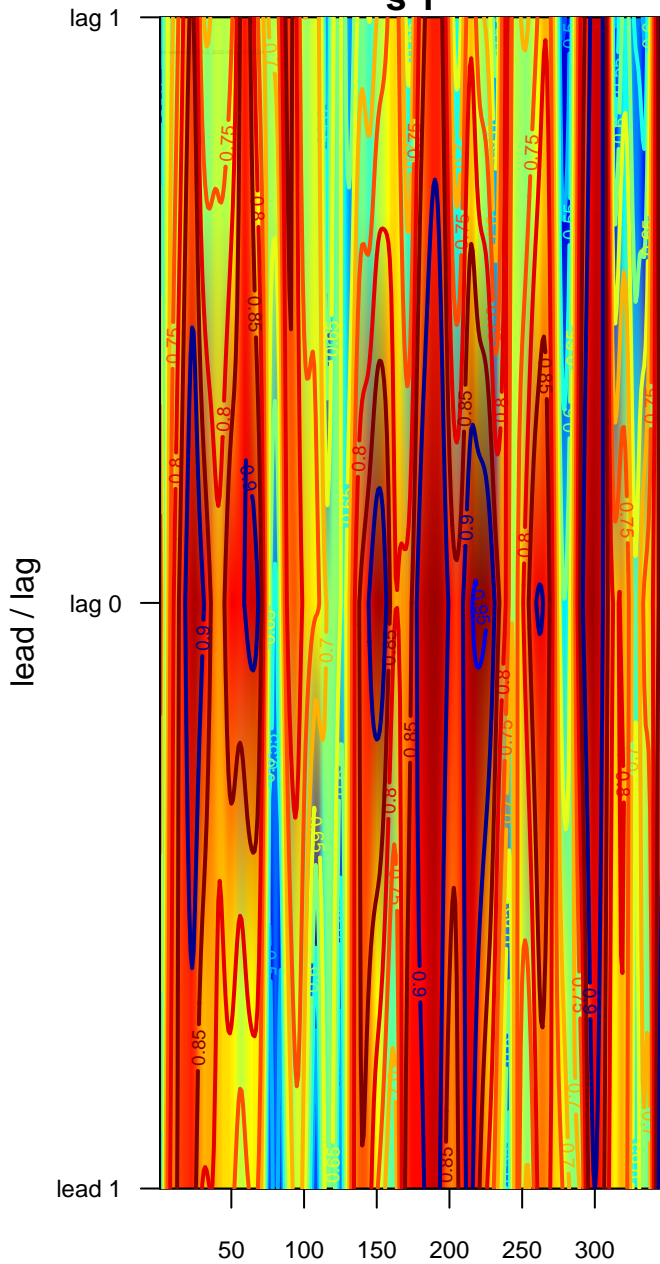


Wavelet Local Multiple Cross-Correlation

s 1

level 1

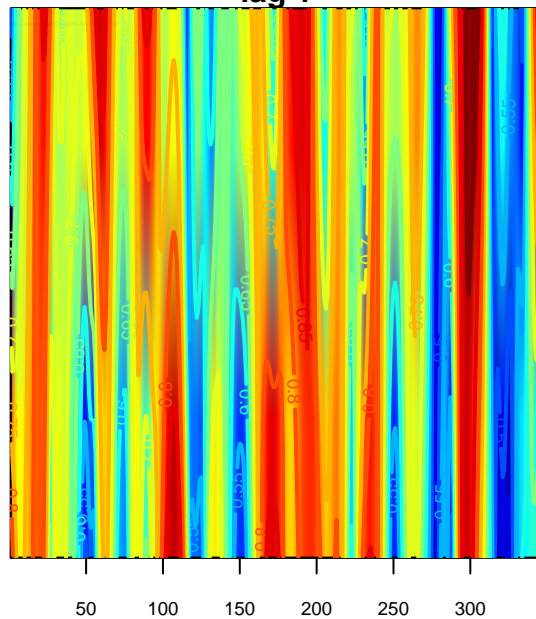
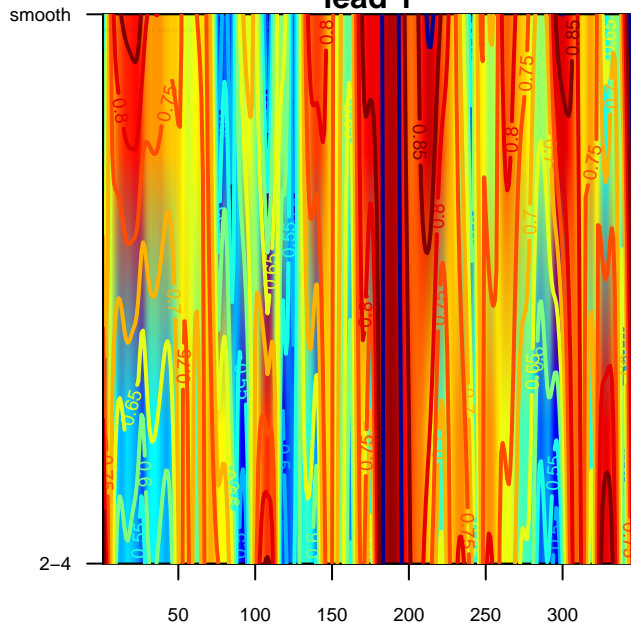
ϕ



Wavelet Local Multiple Cross-Correlation

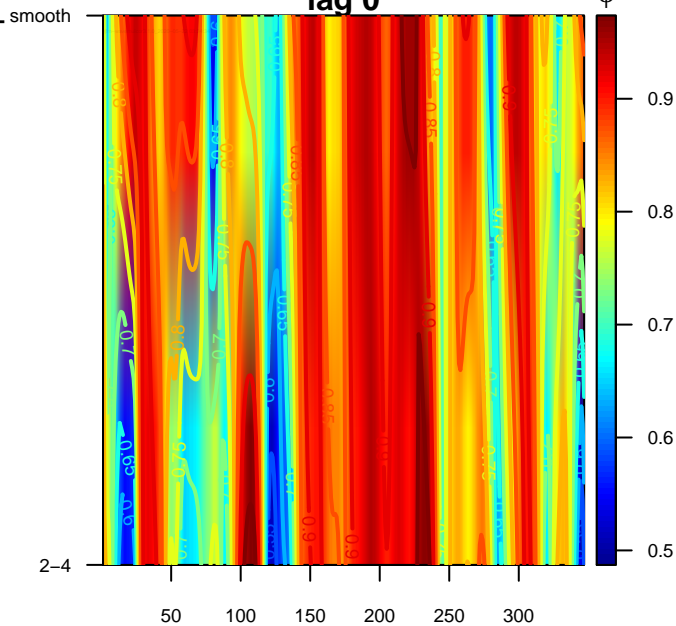
lead 1

lag 1

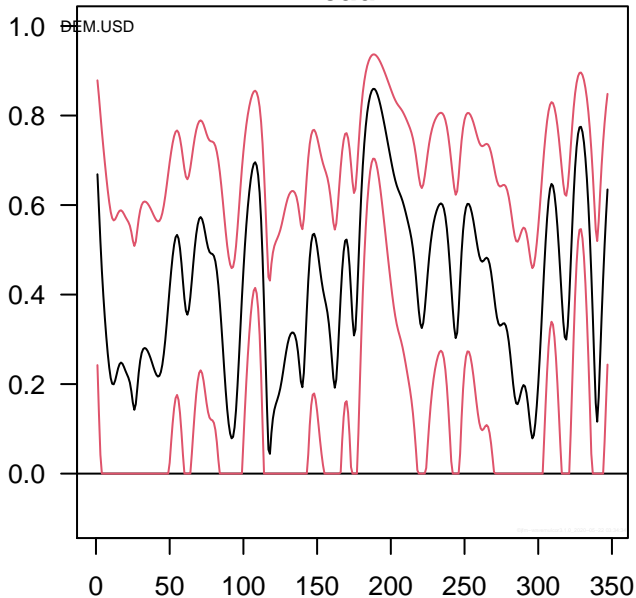


lag 0

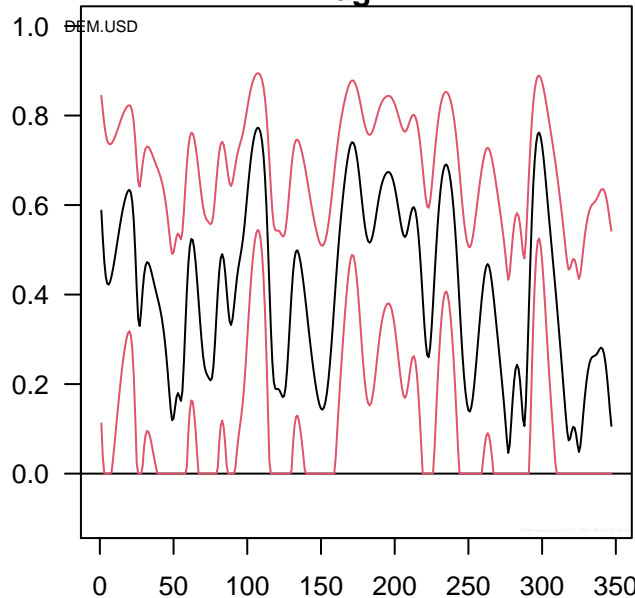
ϕ



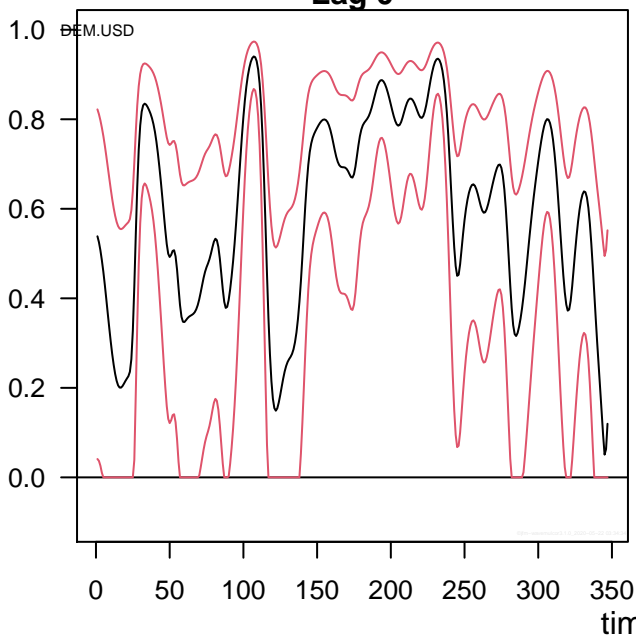
Lead 1



Lag 1

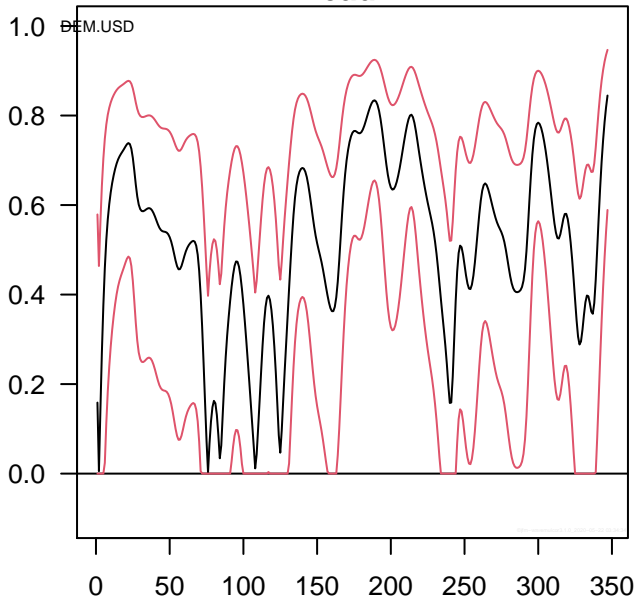


Lag 0

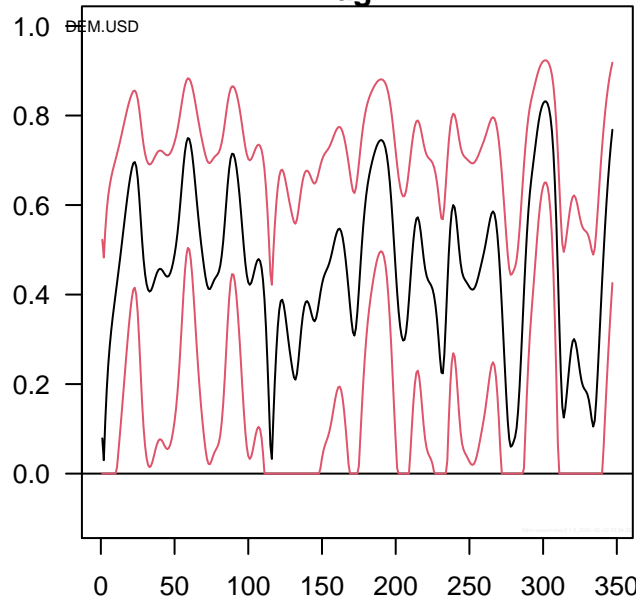


s 1

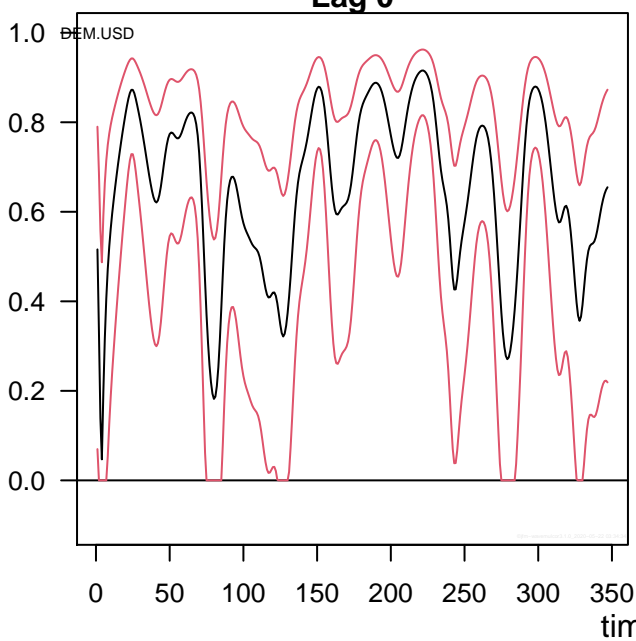
Lead 1



Lag 1



Lag 0

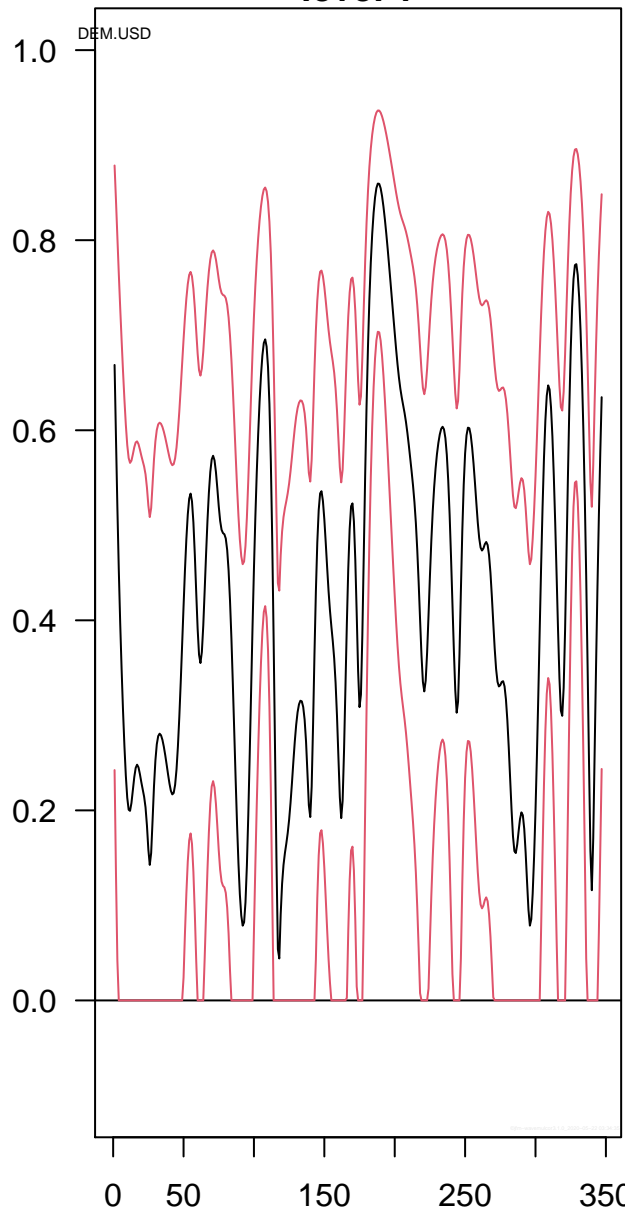
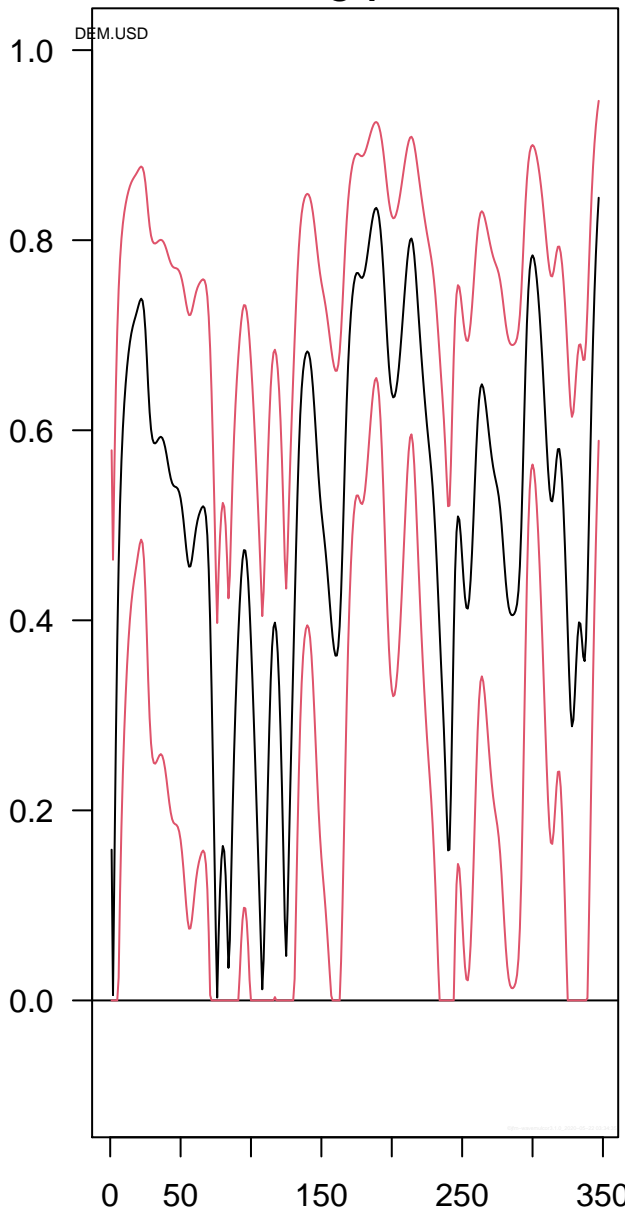


Lead 1

s 1

level 1

Wavelet Local Multiple Cross-Correlation

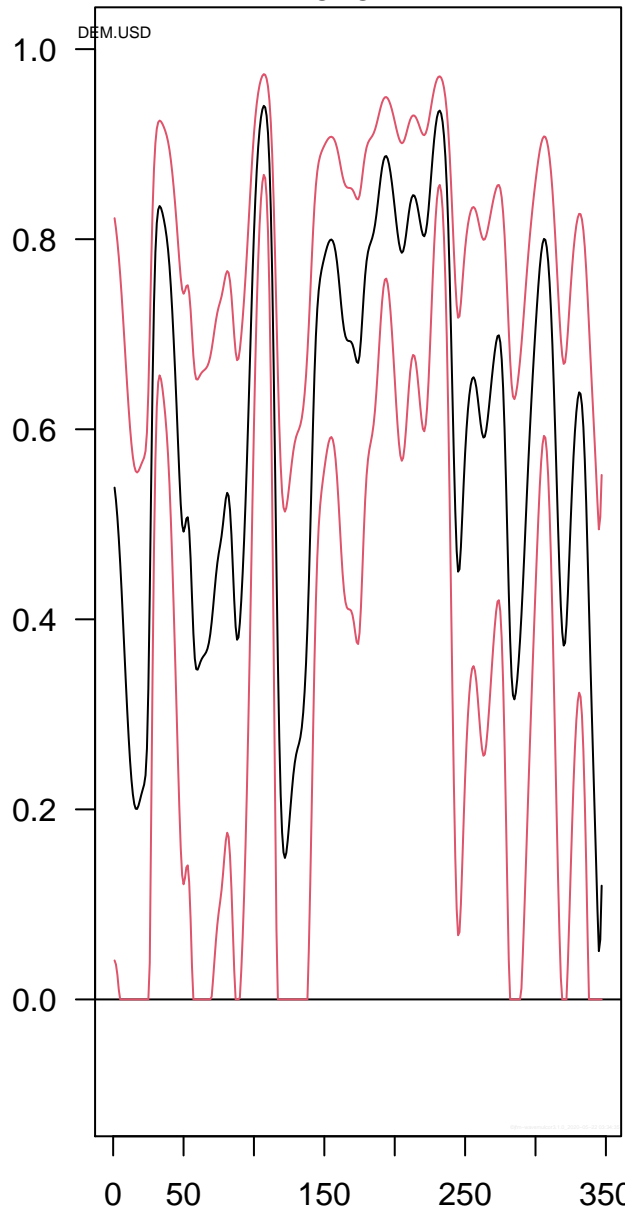
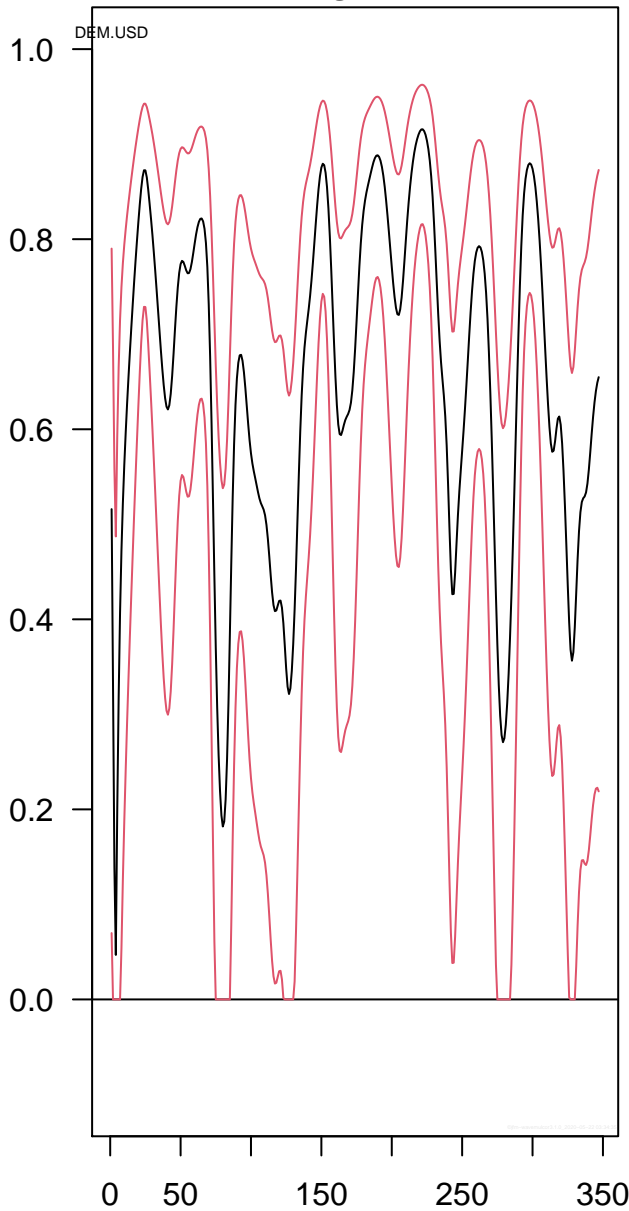


Lag 0

s 1

level 1

Wavelet Local Multiple Cross-Correlation

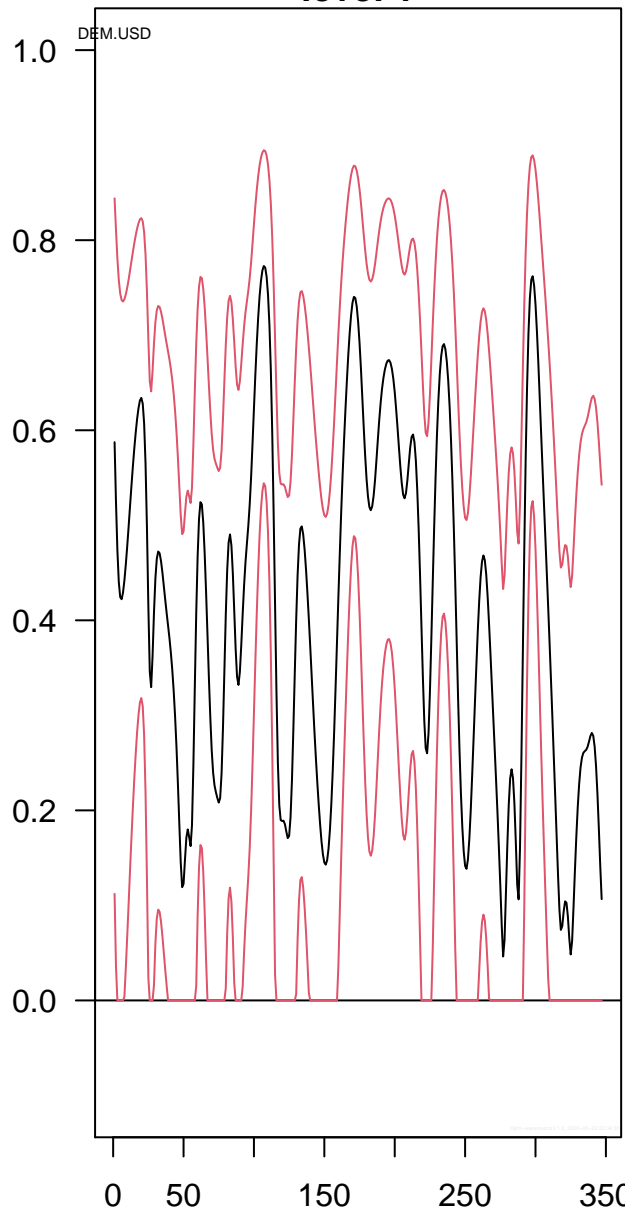
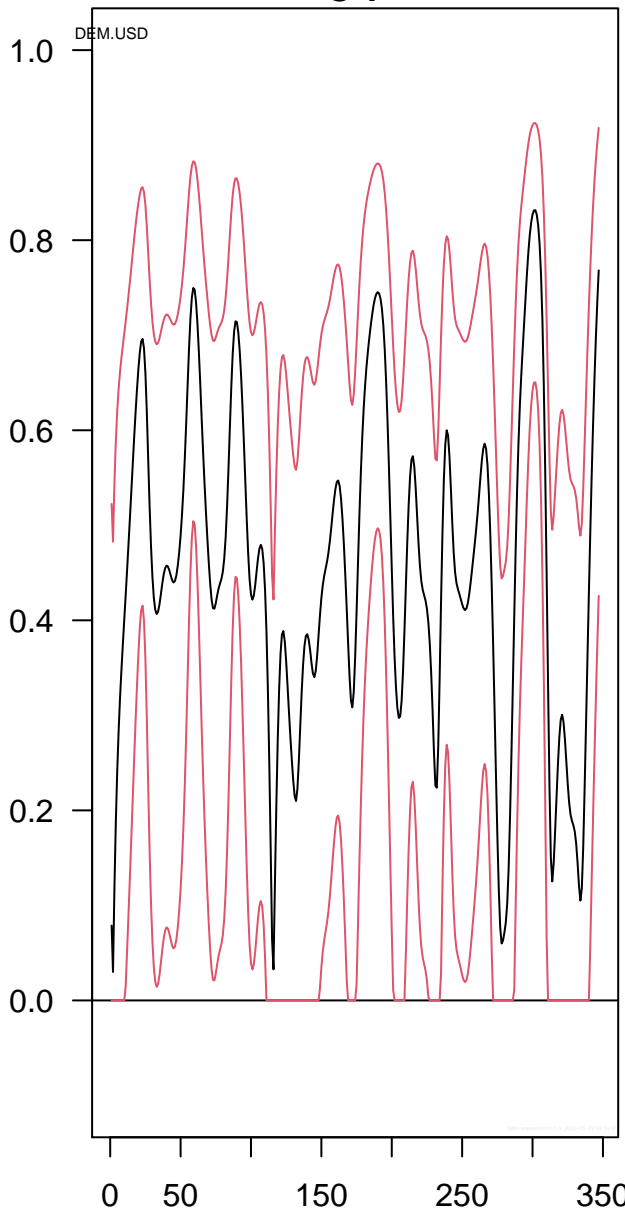


Lag 1

s 1

level 1

Wavelet Local Multiple Cross-Correlation

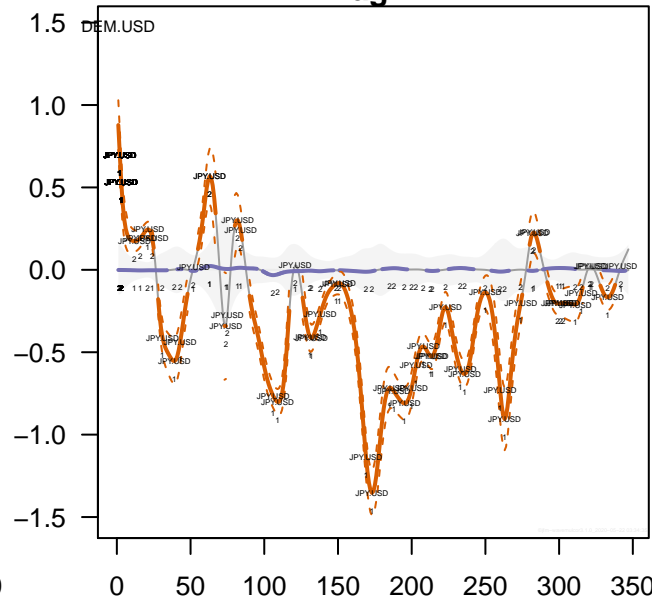
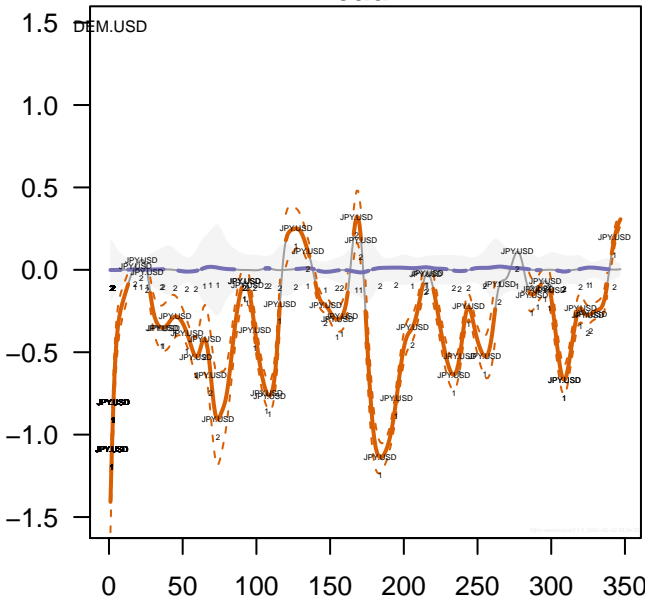


level 1

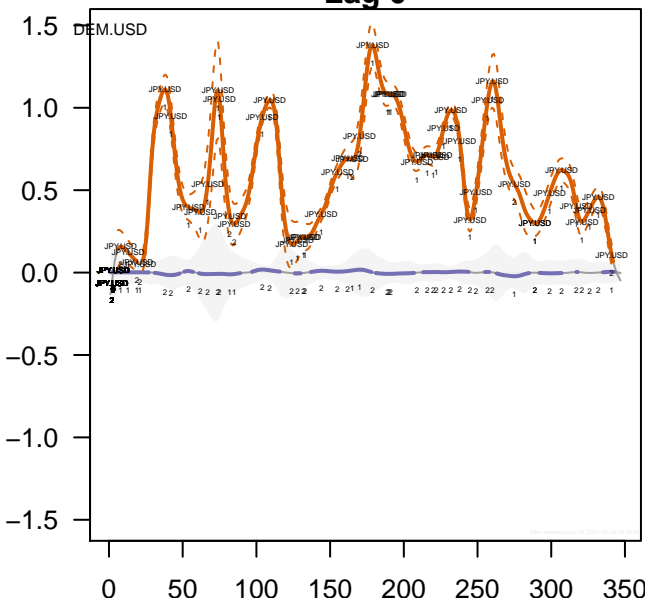
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0

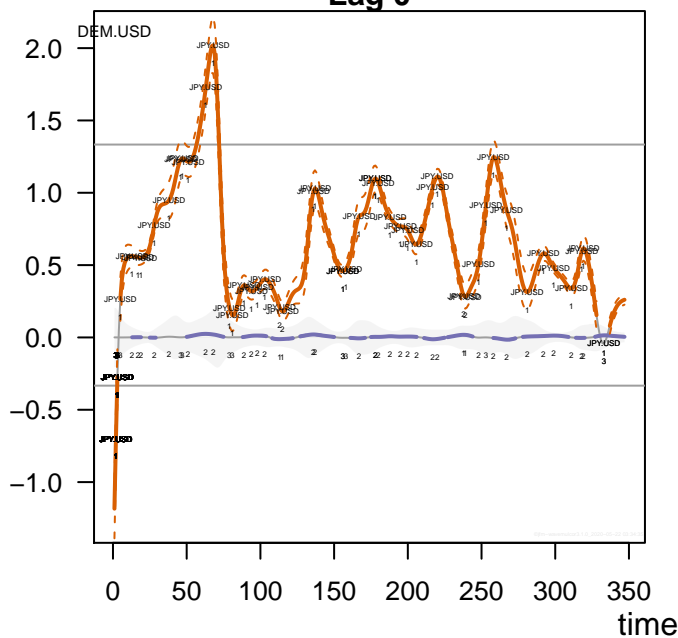
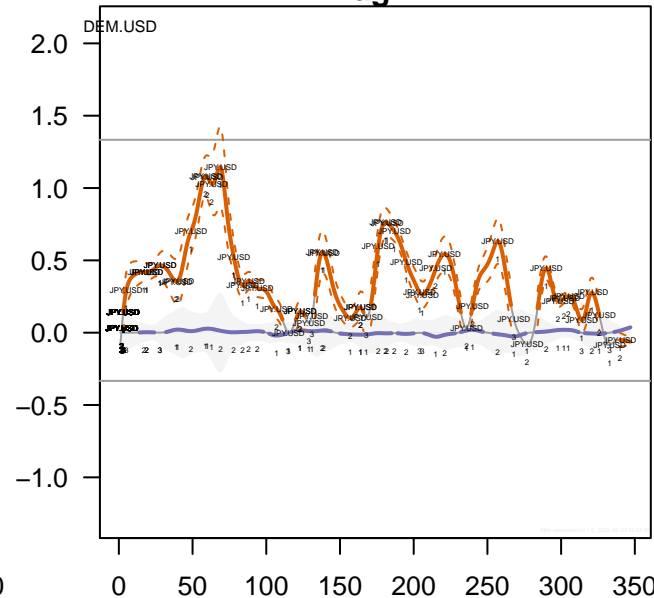
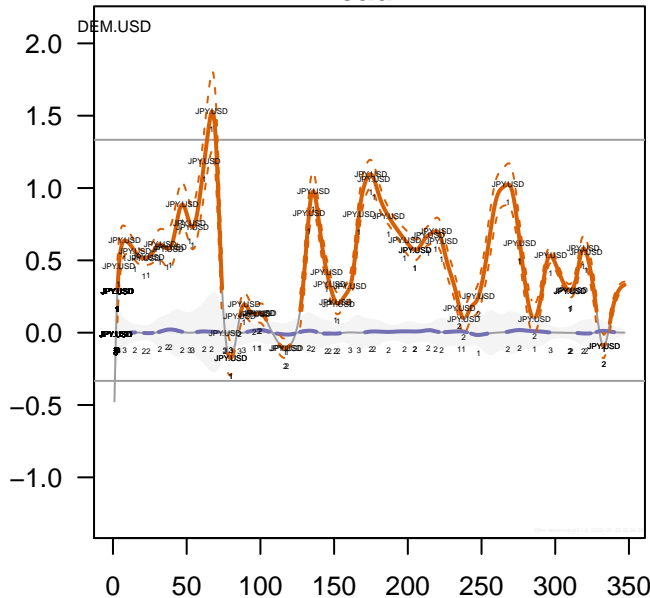


s 1

Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Wavelet Local Multiple Cross-Correlation

s 1

level 1

ϕ

lag 1

lag 0

lead 1

50 100 150 200 250 300

50 100 150 200 250 300

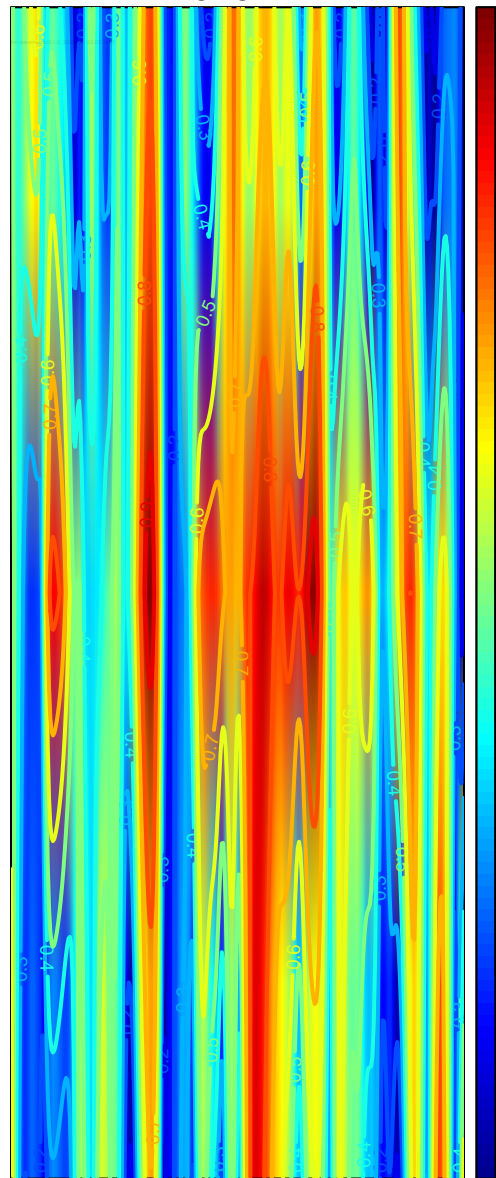
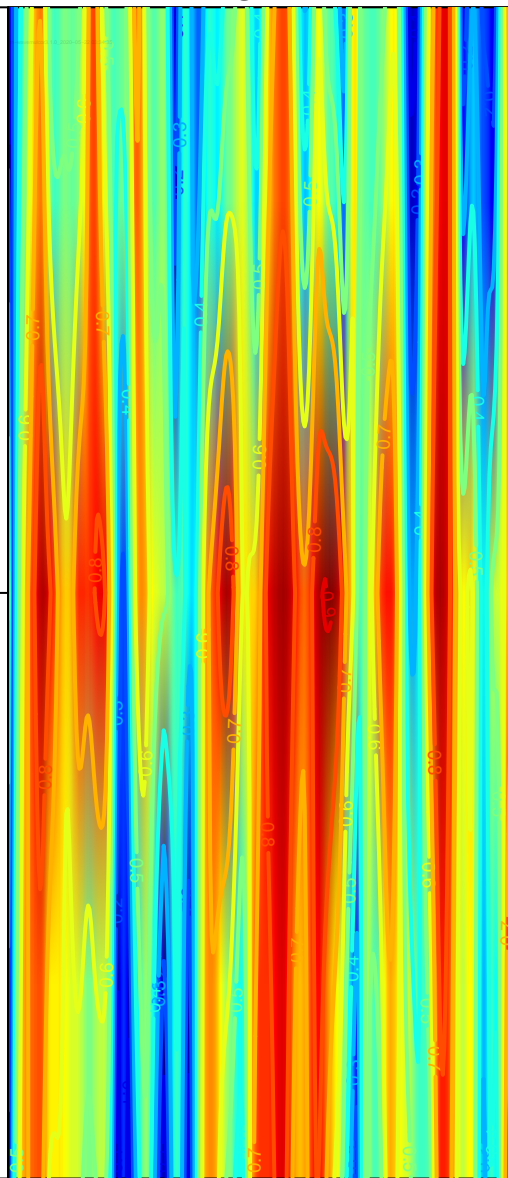
0.8

0.6

0.4

0.2

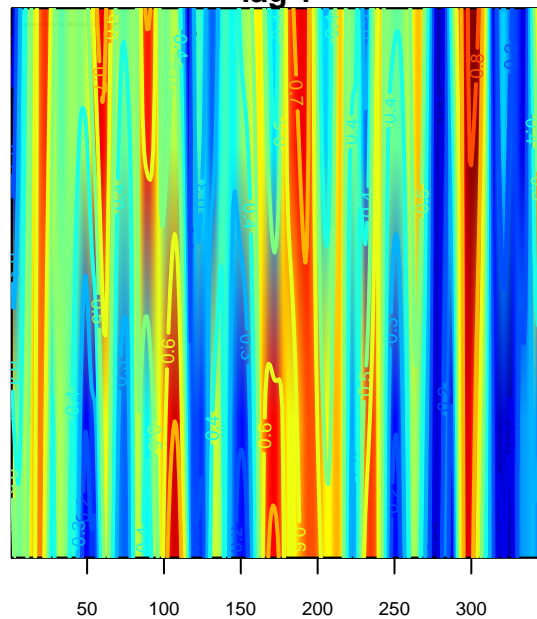
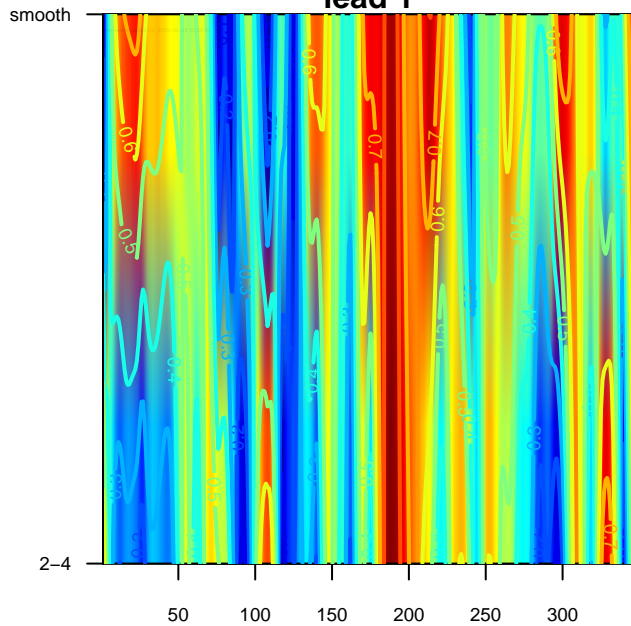
lead / lag



Wavelet Local Multiple Cross-Correlation

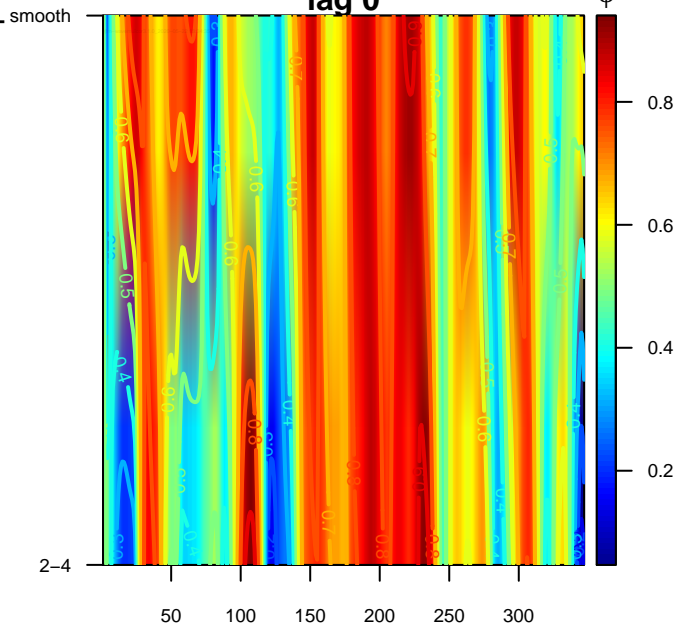
lead 1

lag 1



lag 0

ϕ



Wavelet Local Multiple Cross-Correlation

s 1

level 1

ϕ

lag 1

lag 0

lead 1

50 100 150 200 250 300

50 100 150 200 250 300

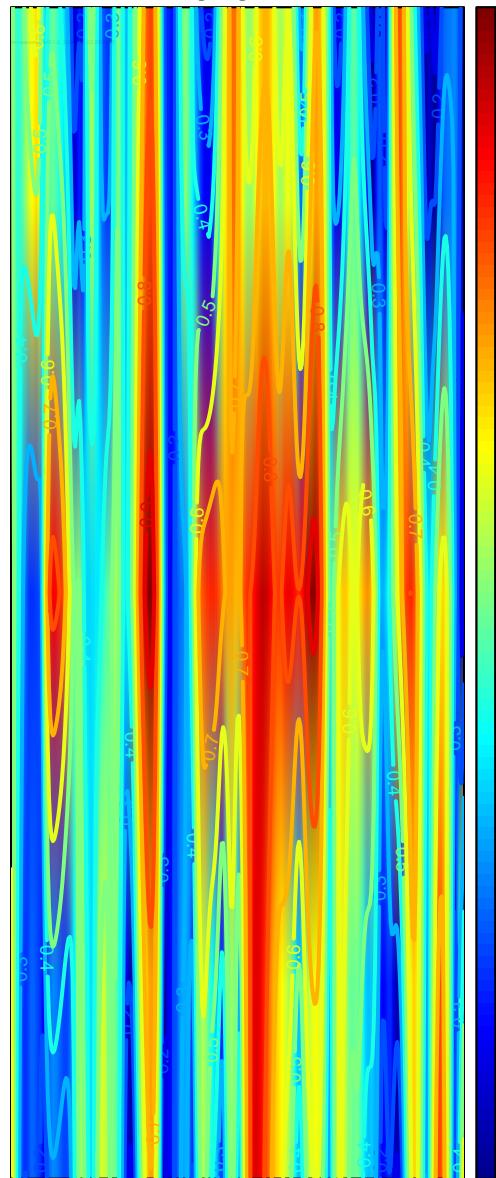
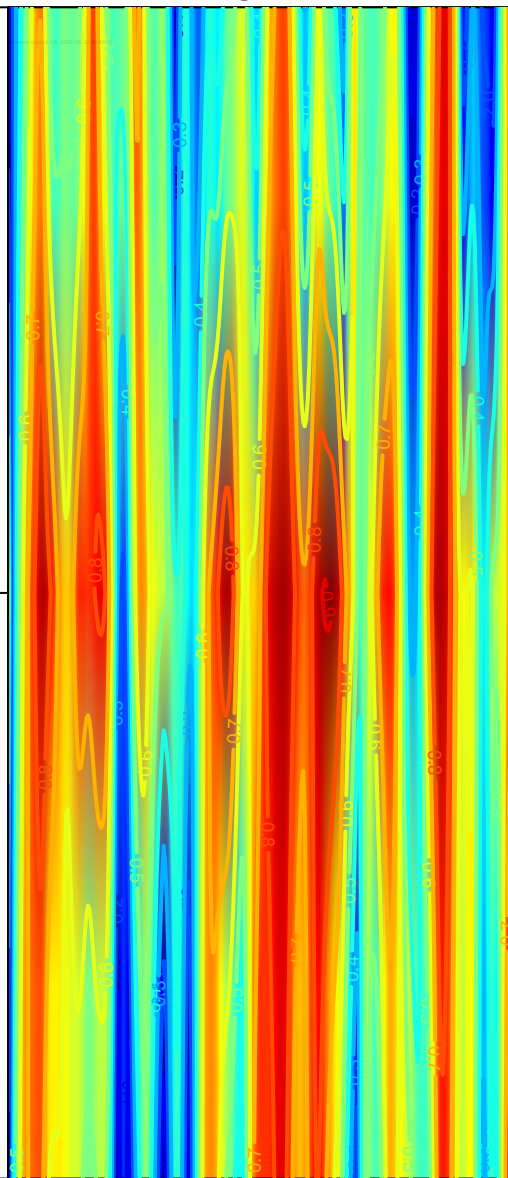
0.8

0.6

0.4

0.2

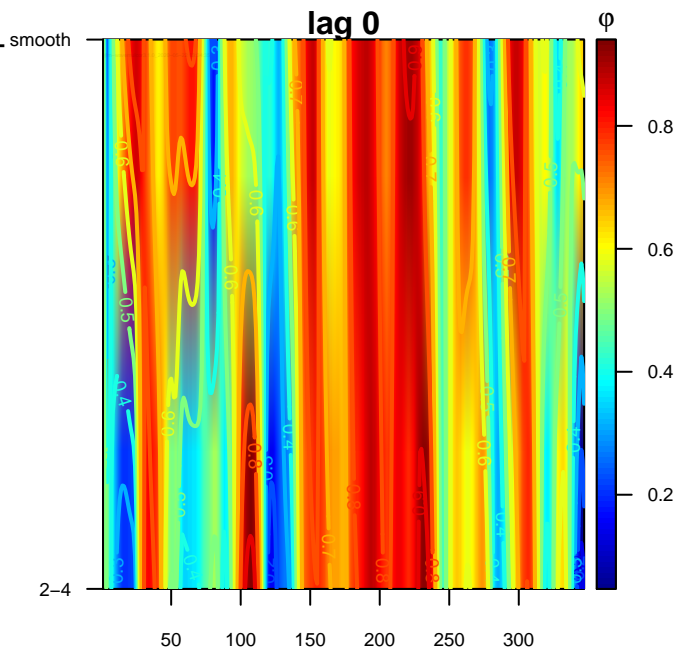
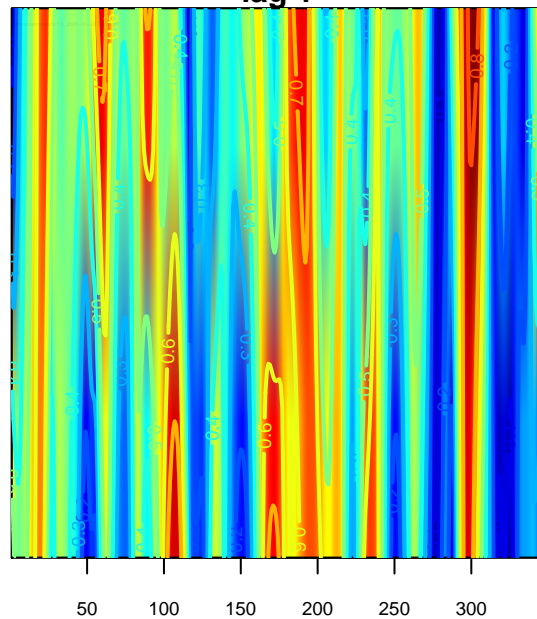
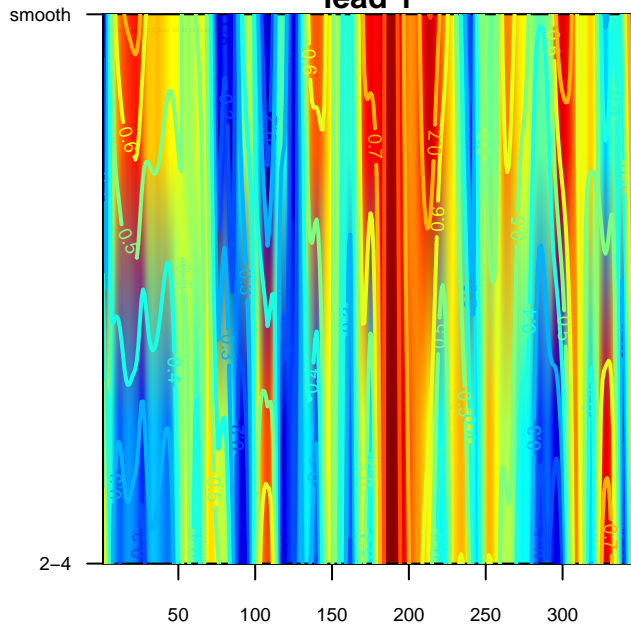
lead / lag



Wavelet Local Multiple Cross-Correlation

lead 1

lag 1

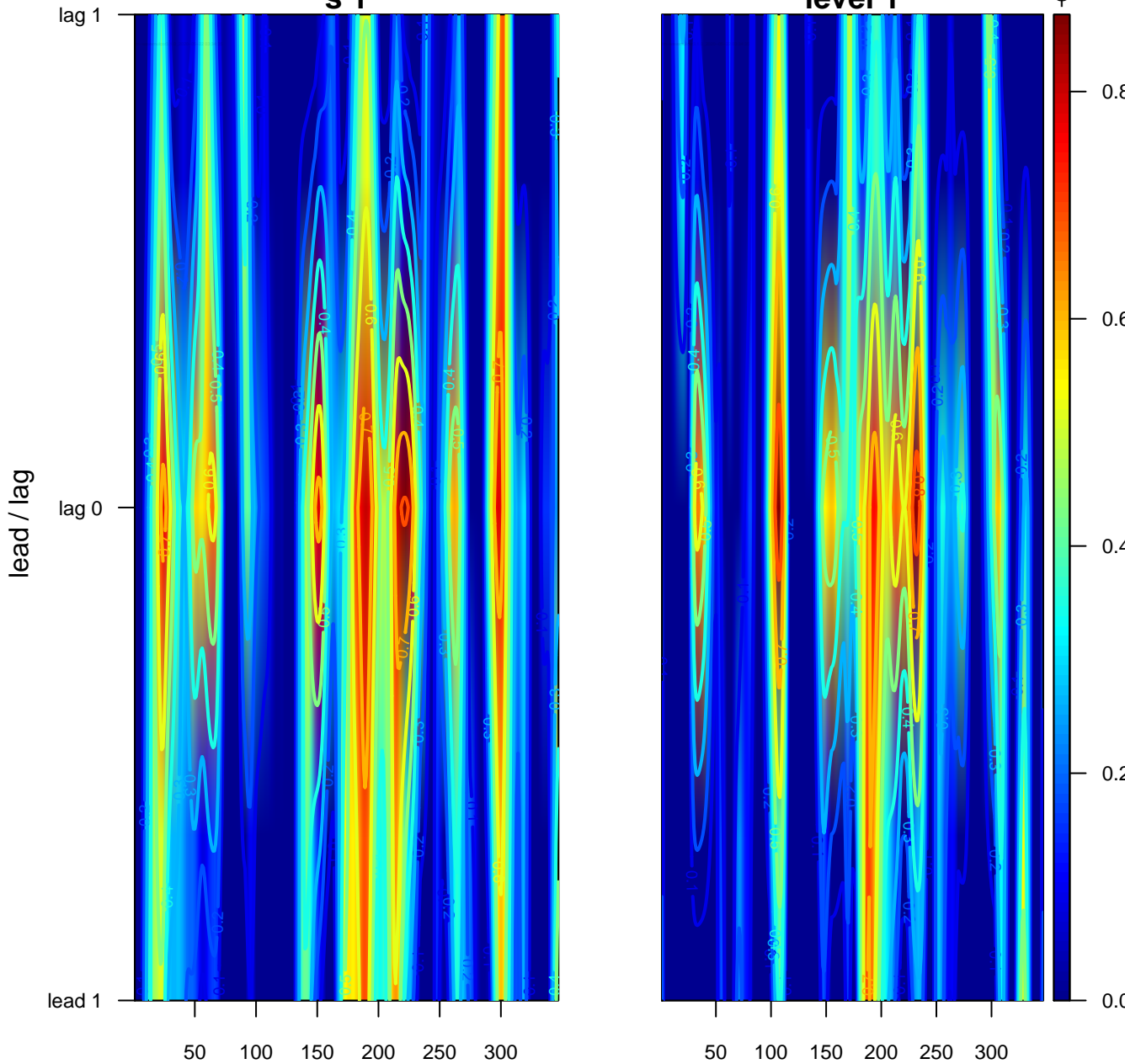


Wavelet Local Multiple Cross-Correlation

s 1

level 1

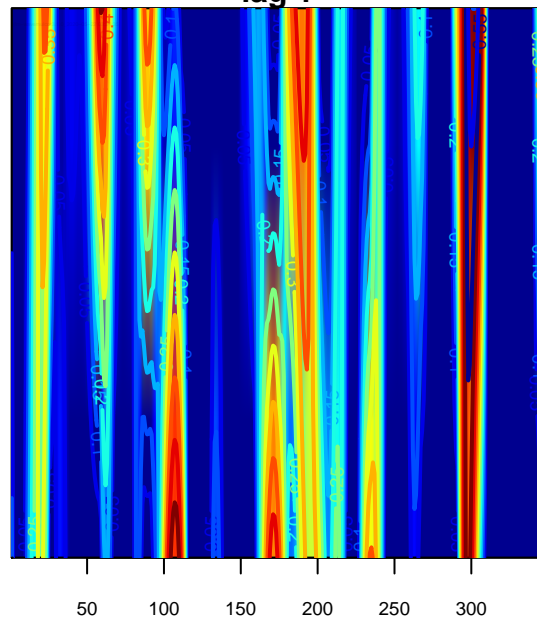
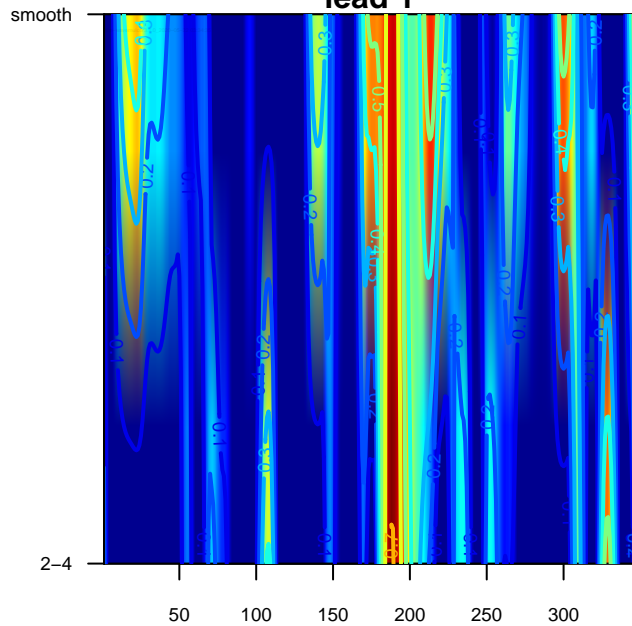
ϕ



Wavelet Local Multiple Cross-Correlation

lead 1

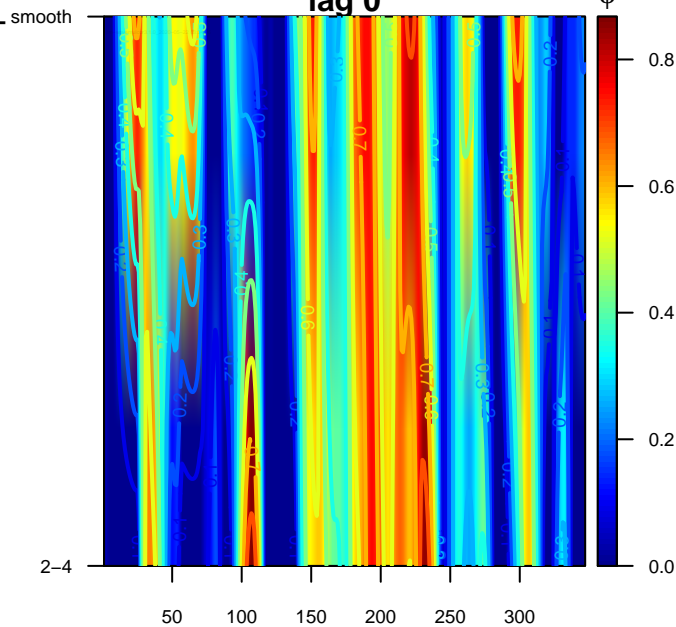
lag 1



lag 0

ϕ

period

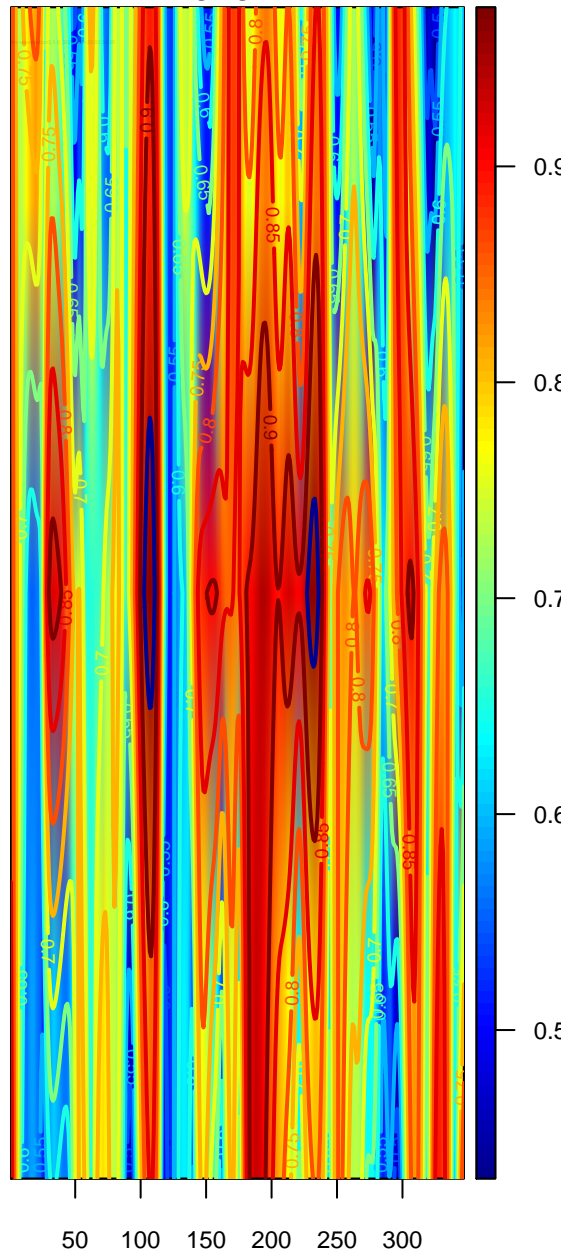
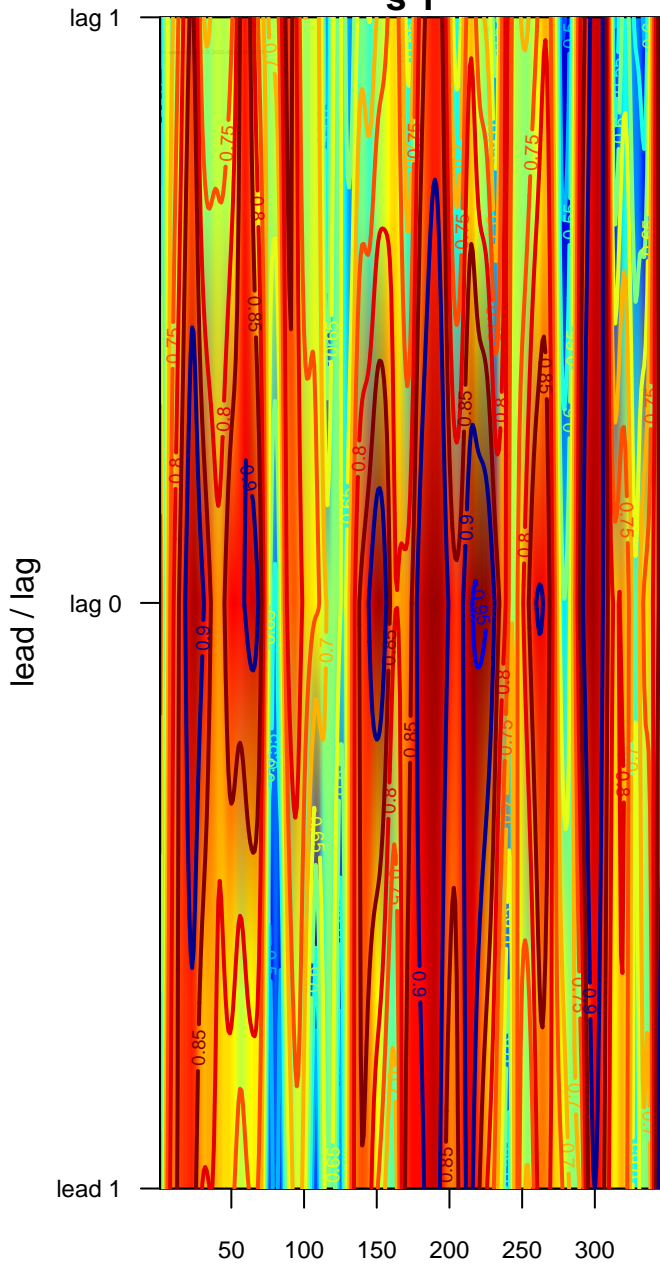


Wavelet Local Multiple Cross-Correlation

s 1

level 1

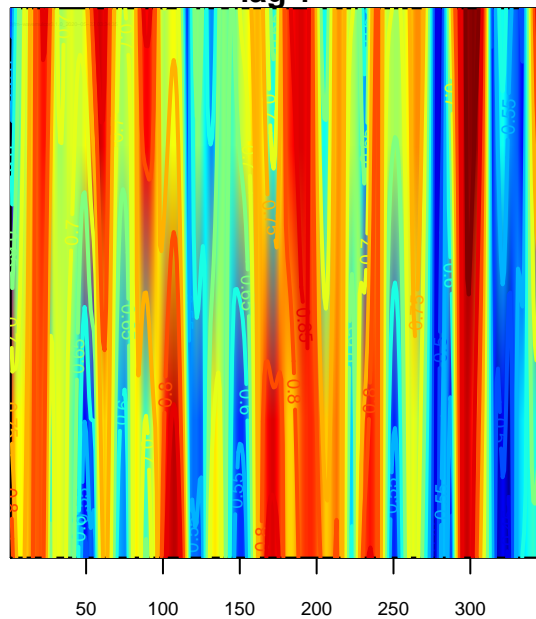
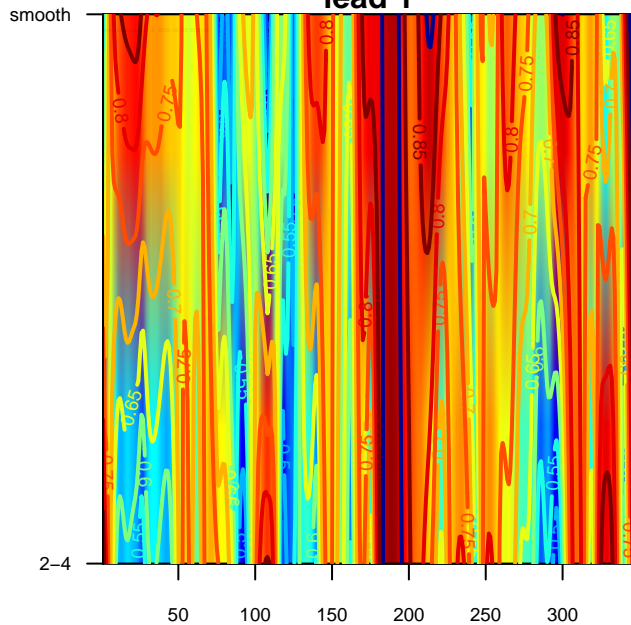
ϕ



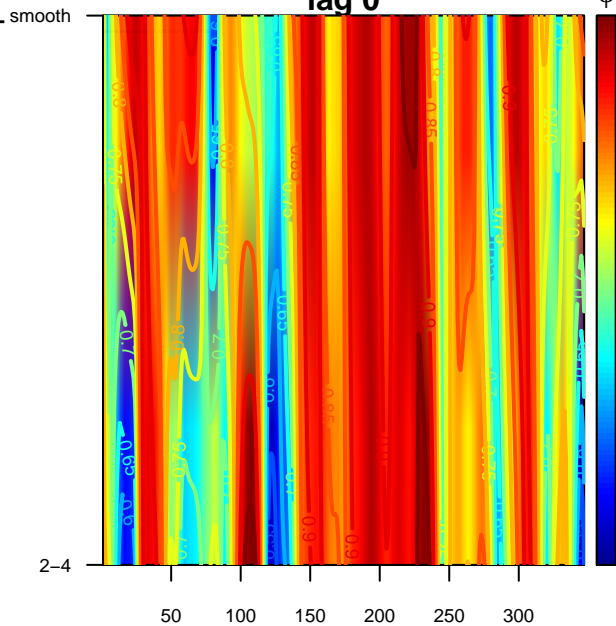
Wavelet Local Multiple Cross-Correlation

lead 1

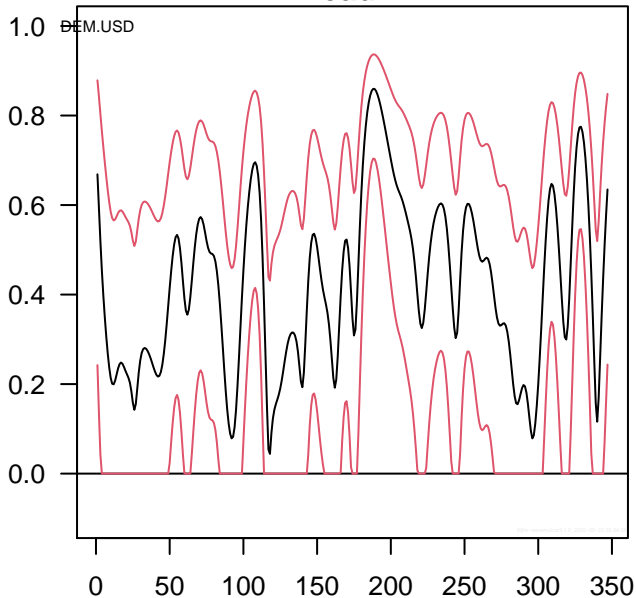
lag 1



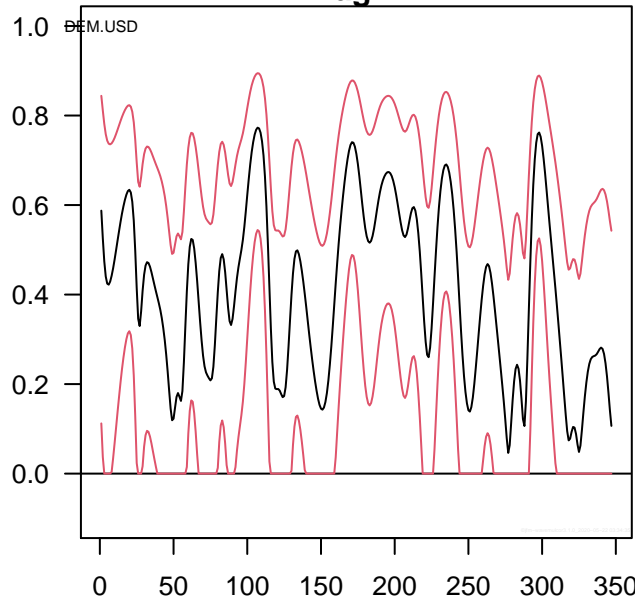
period



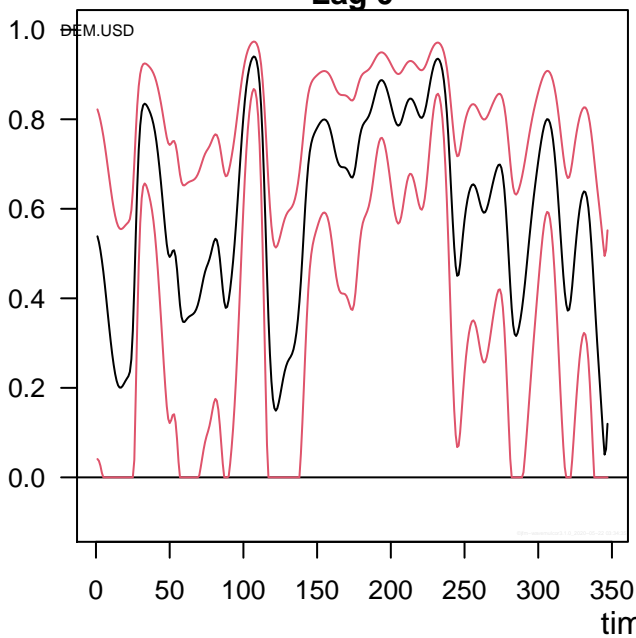
Lead 1



Lag 1

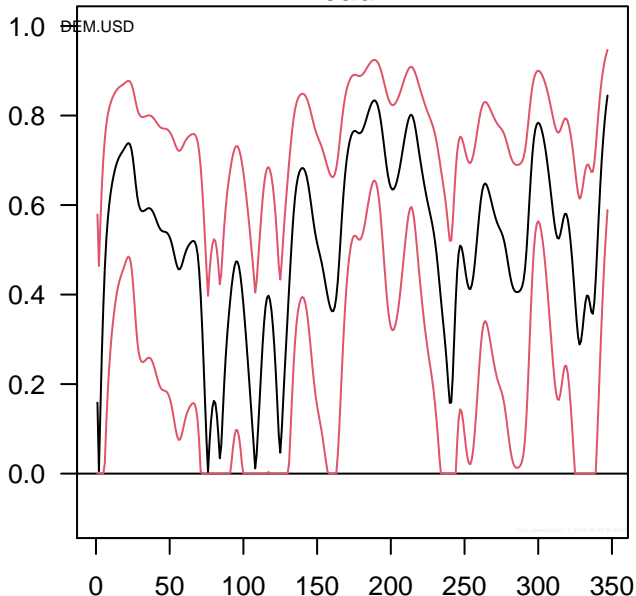


Lag 0

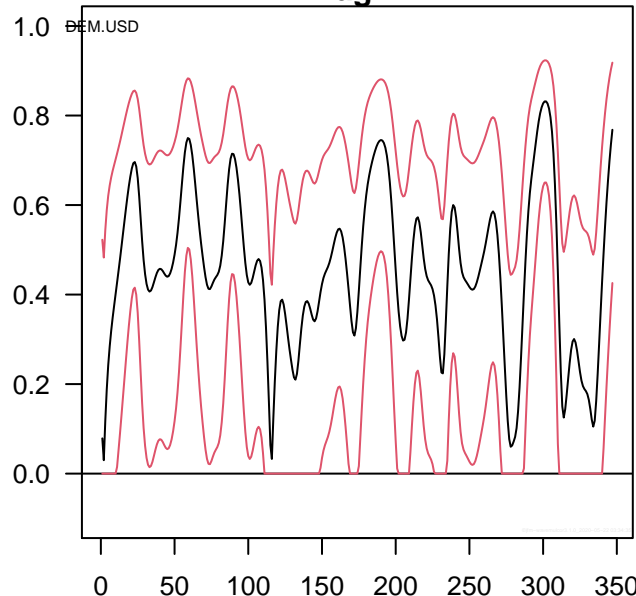


s 1

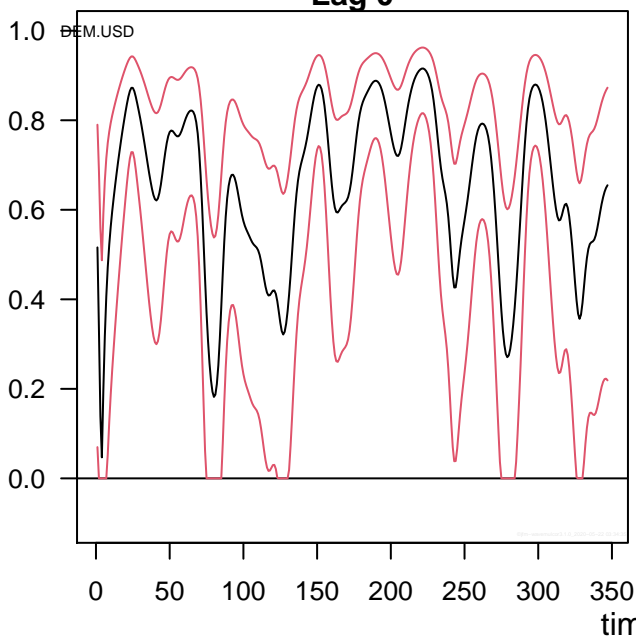
Lead 1



Lag 1



Lag 0

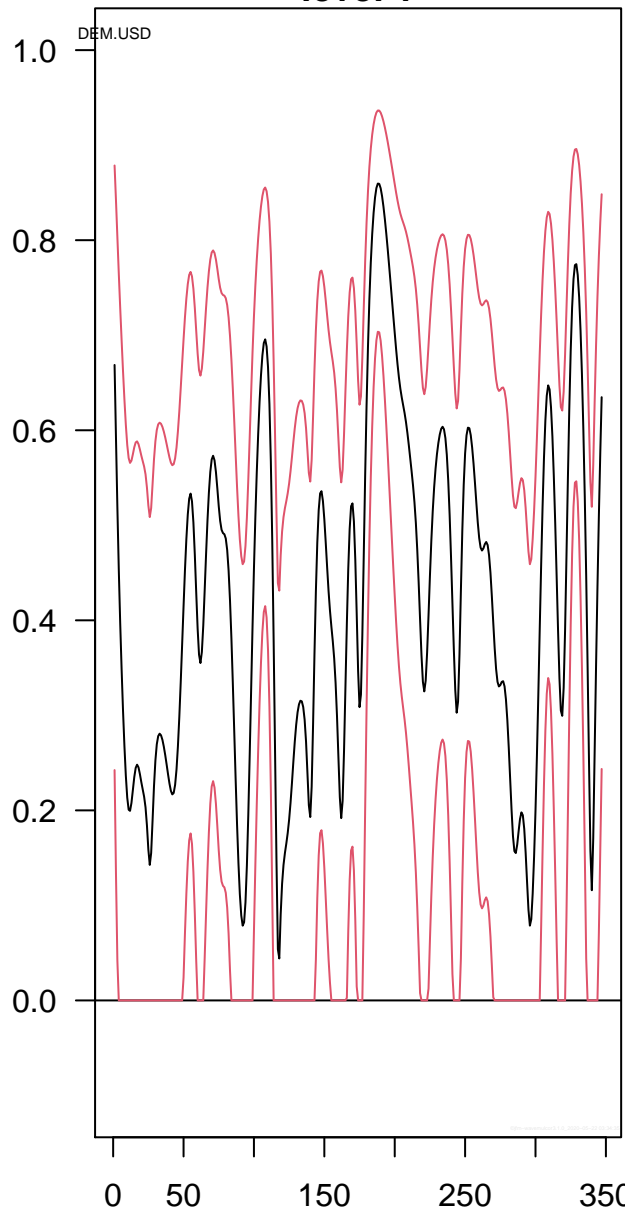
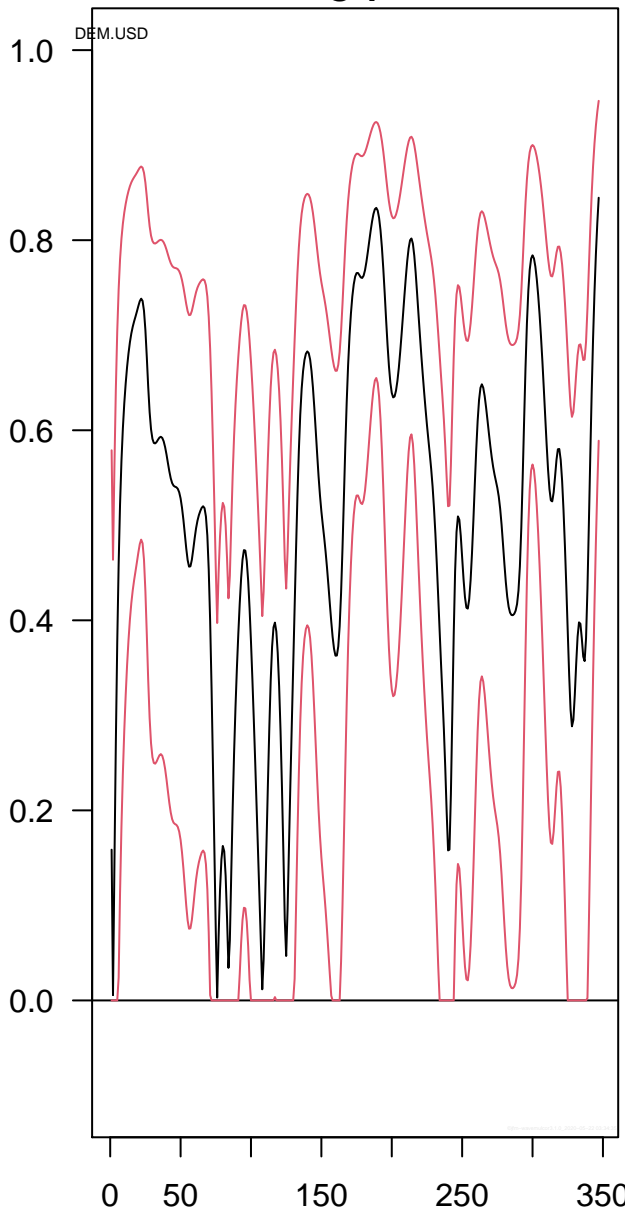


Lead 1

s 1

level 1

Wavelet Local Multiple Cross-Correlation

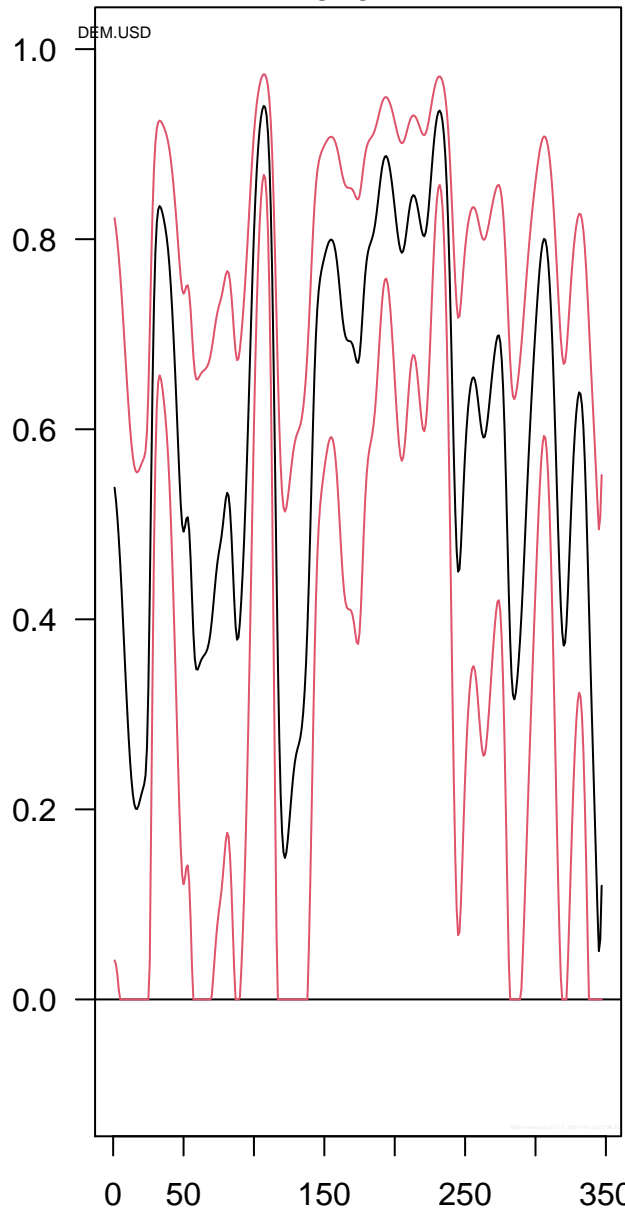
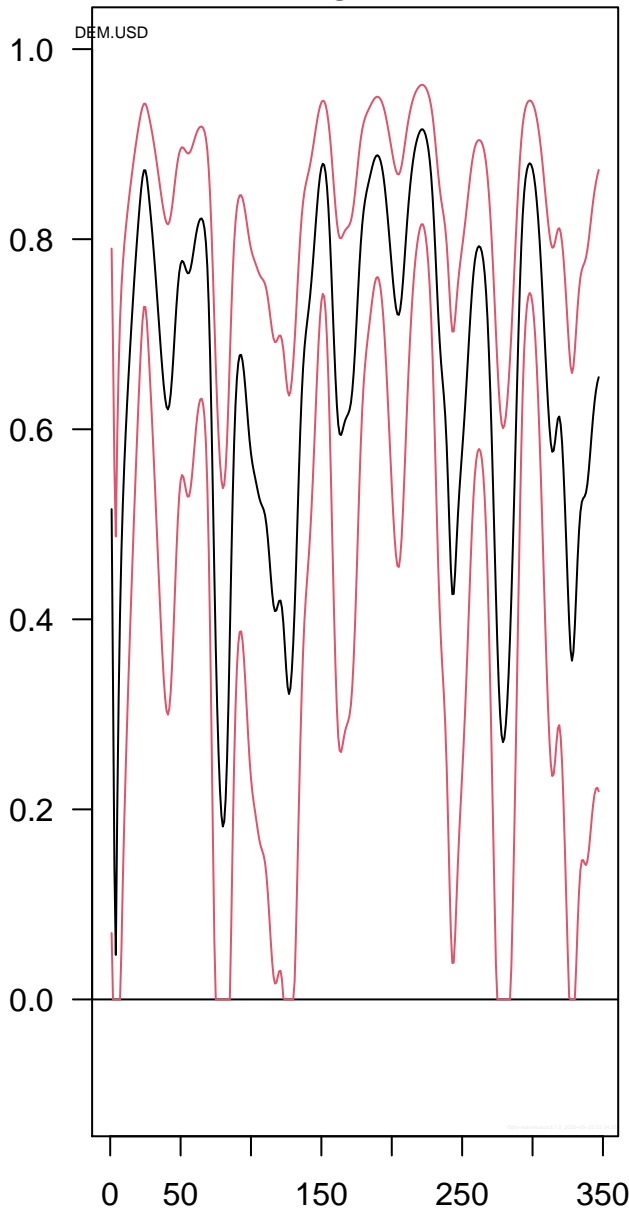


Lag 0

s 1

level 1

Wavelet Local Multiple Cross-Correlation

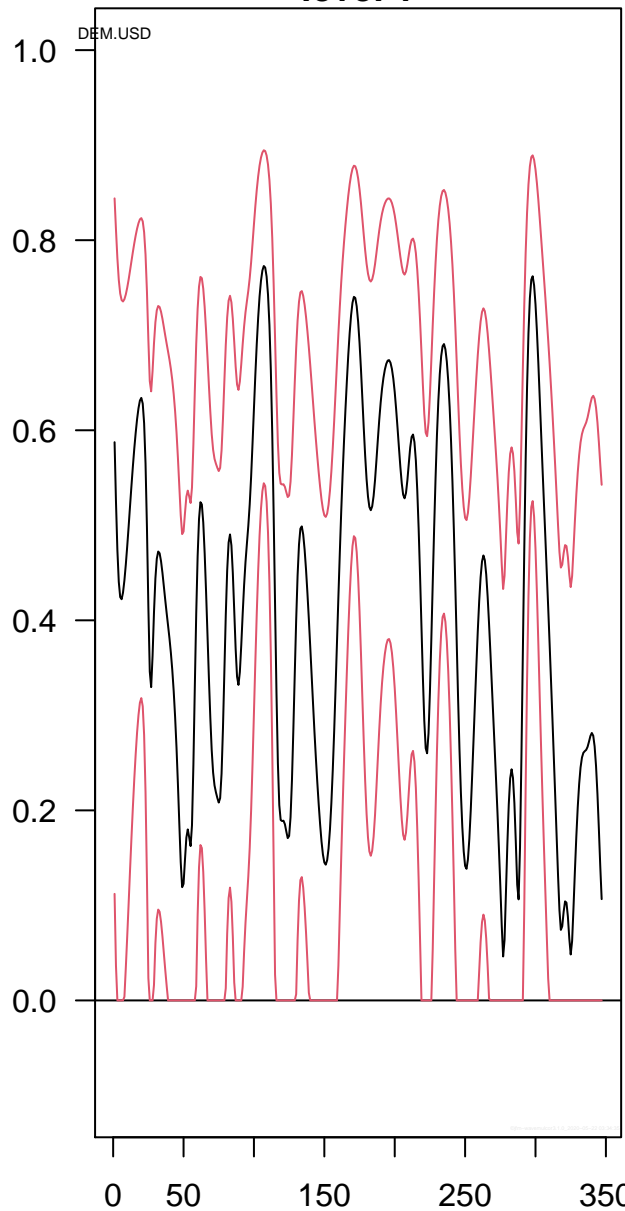
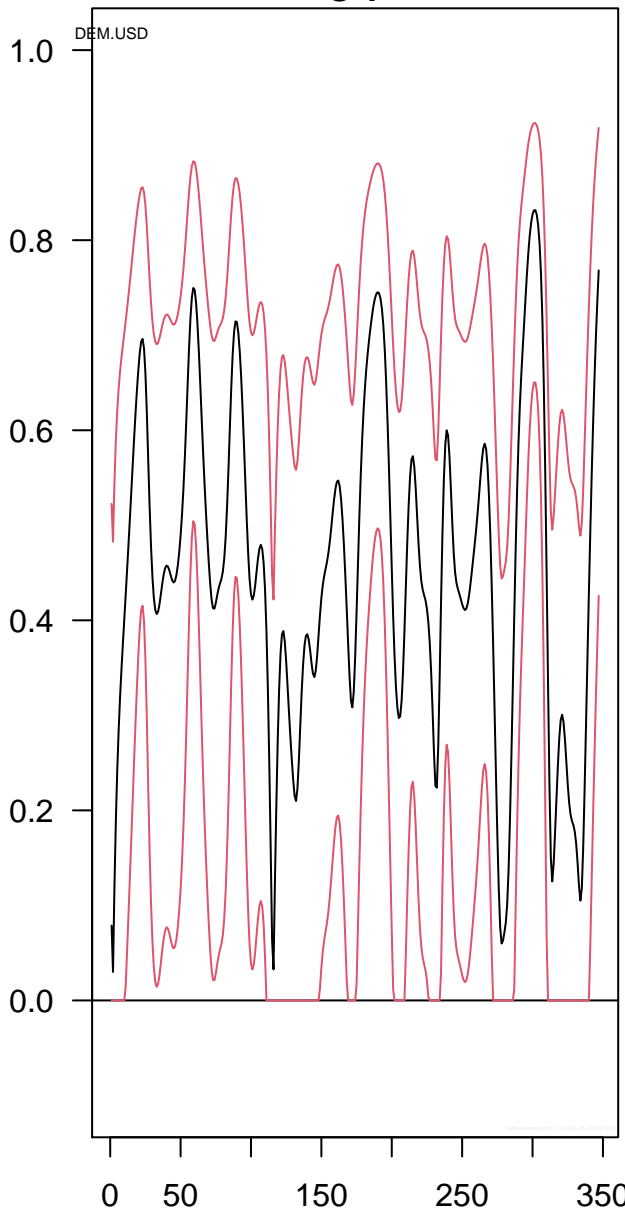


Lag 1

s 1

level 1

Wavelet Local Multiple Cross-Correlation

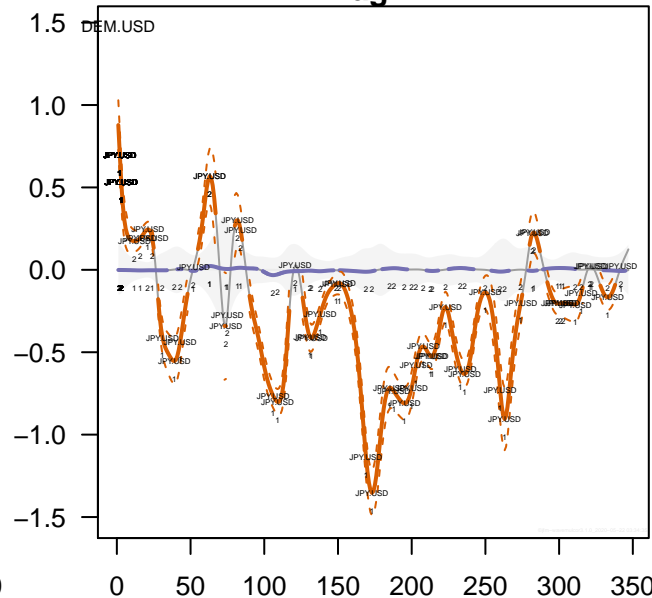
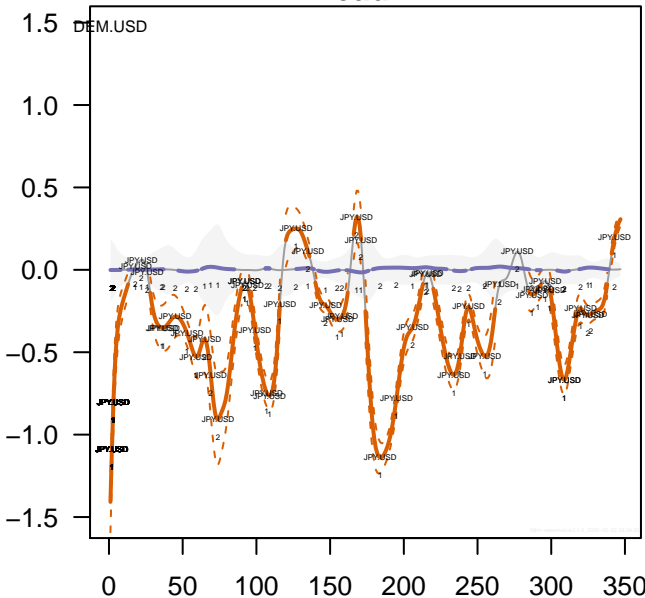


level 1

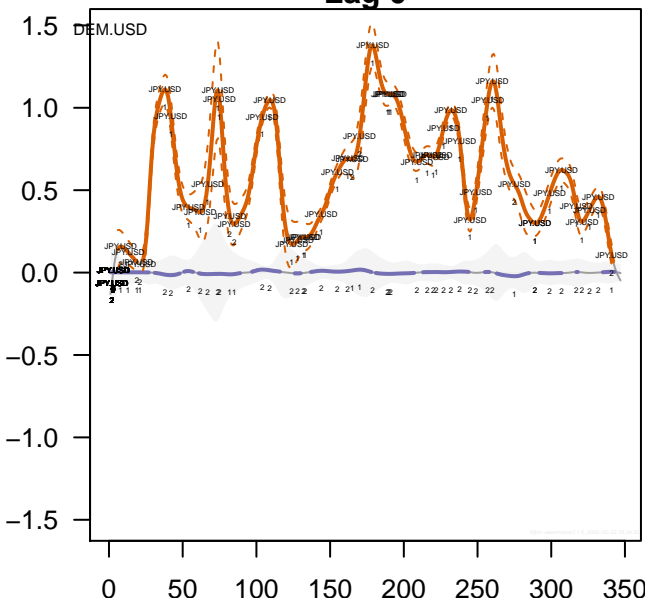
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0

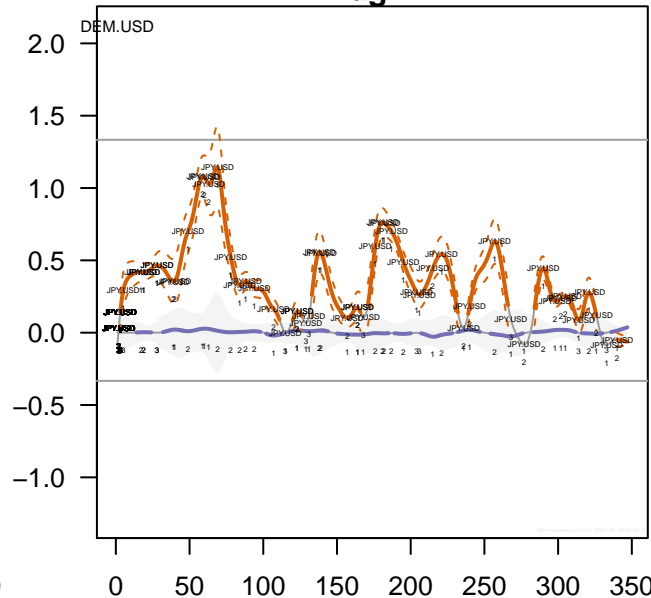
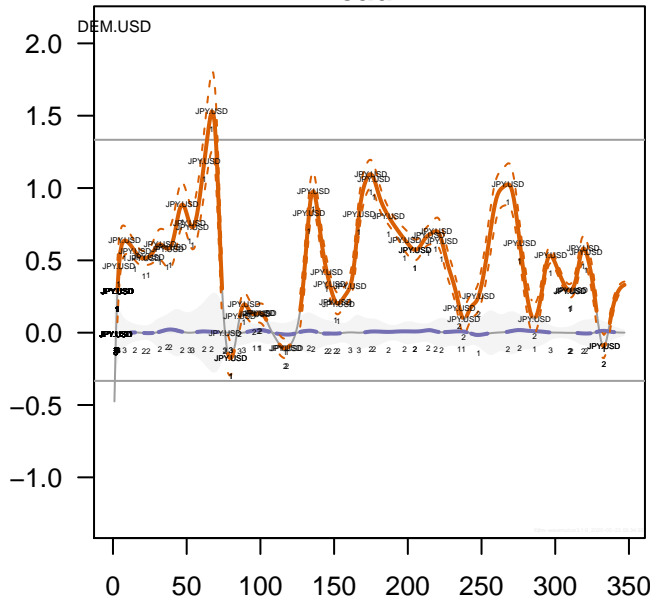


s 1

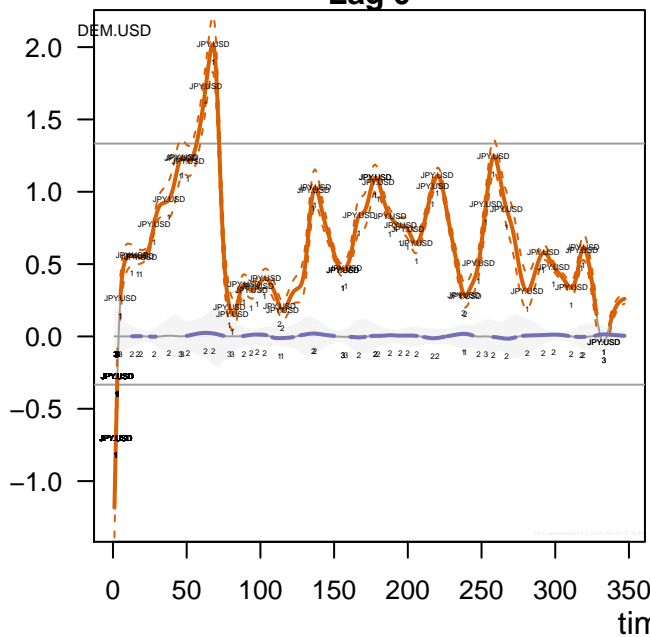
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0



Wavelet Local Multiple Cross-Correlation

s 1

level 1

ϕ

lag 1

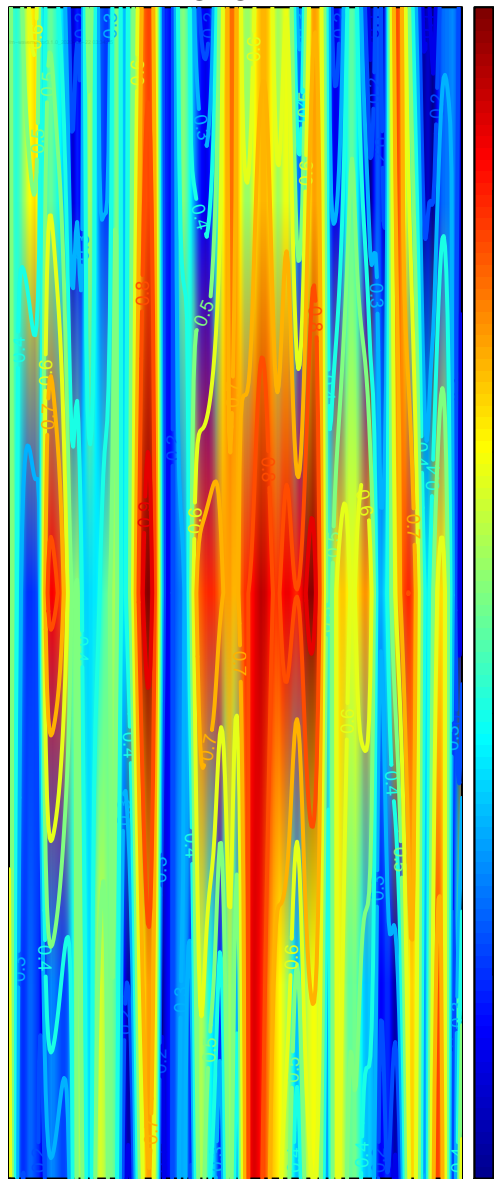
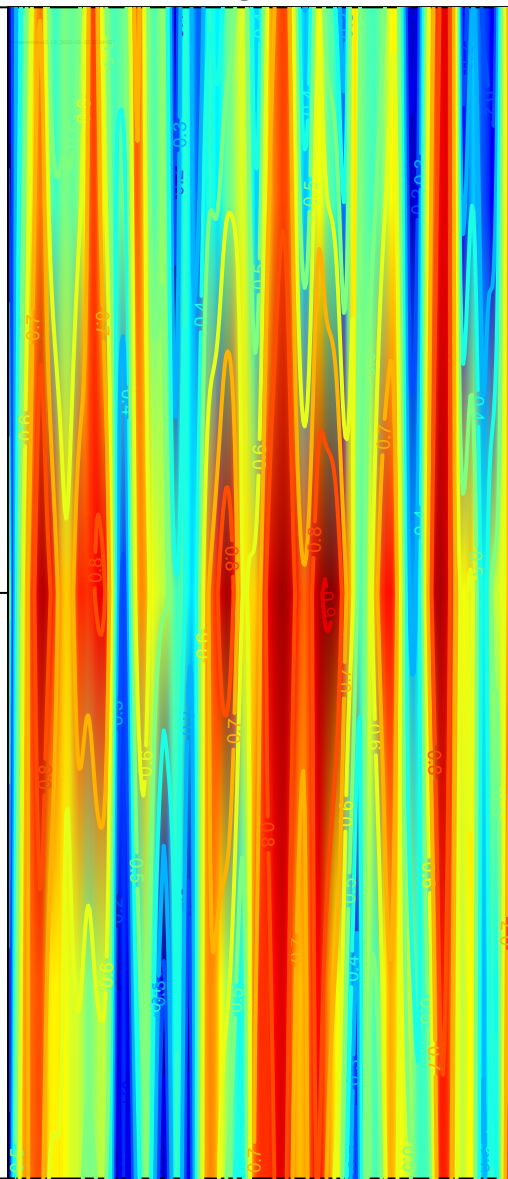
lag 0

lead 1

1

1

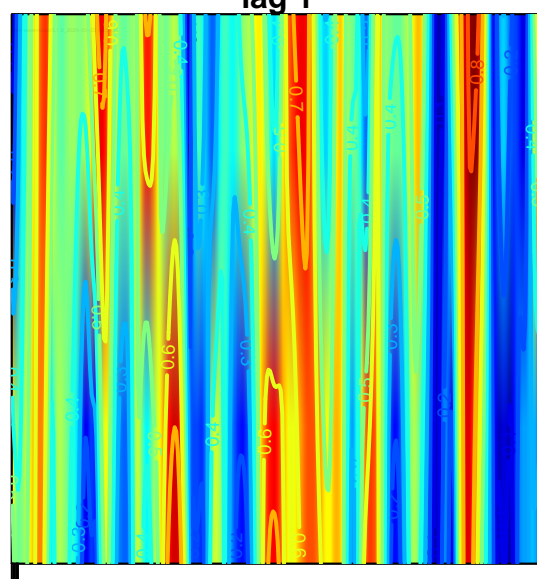
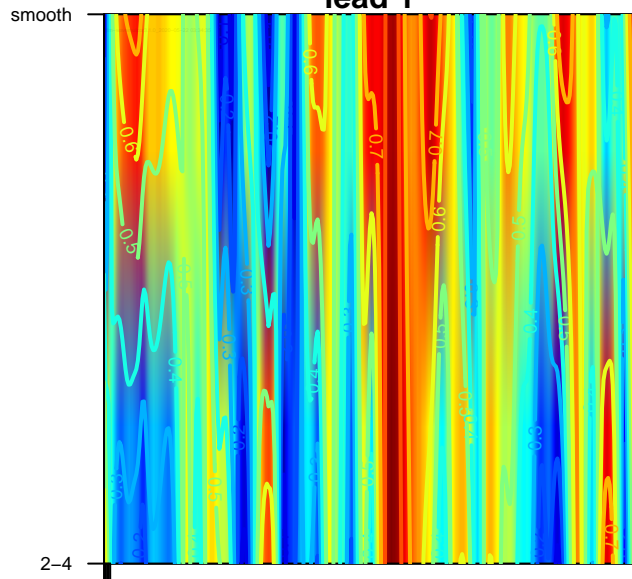
lead / lag



Wavelet Local Multiple Cross-Correlation

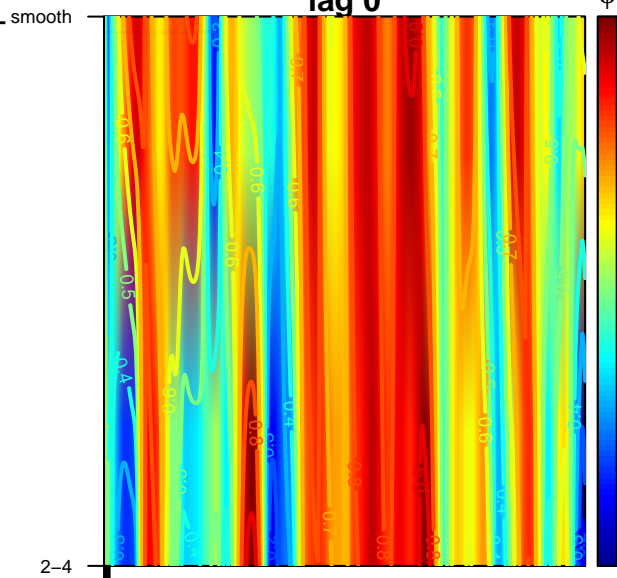
lead 1

lag 1



lag 0

ϕ



0.8

0.6

0.4

0.2

Wavelet Local Multiple Cross-Correlation

s 1

level 1

ϕ

lag 1

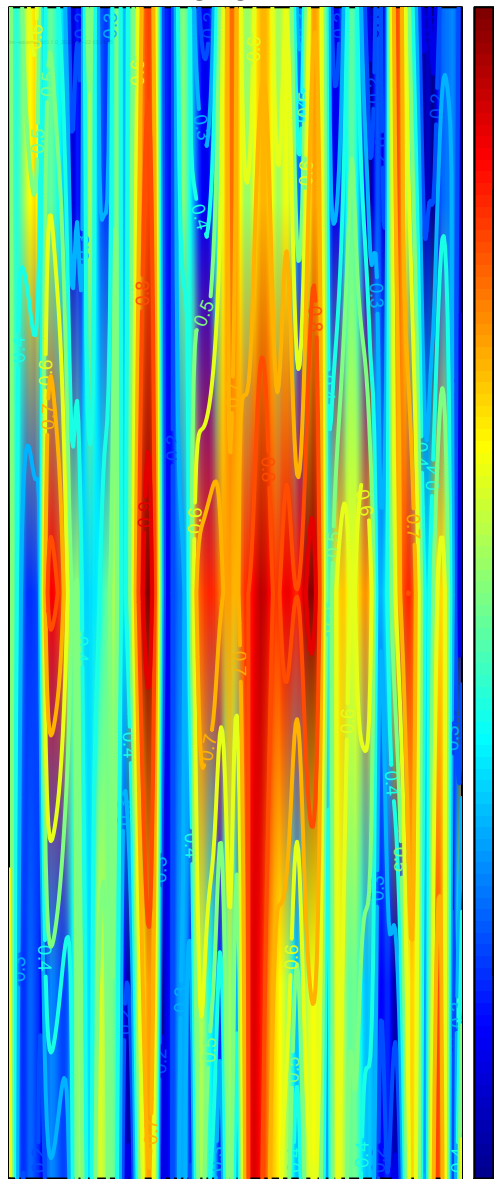
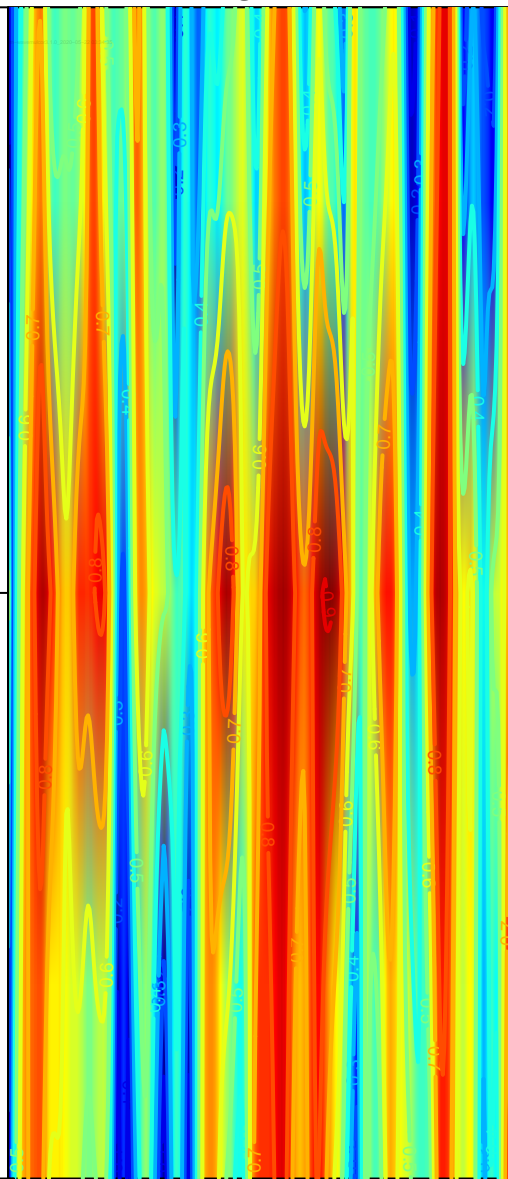
lag 0

lead 1

1

1

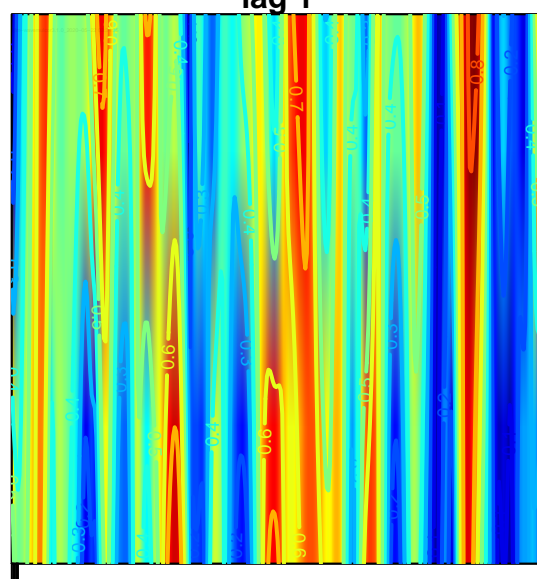
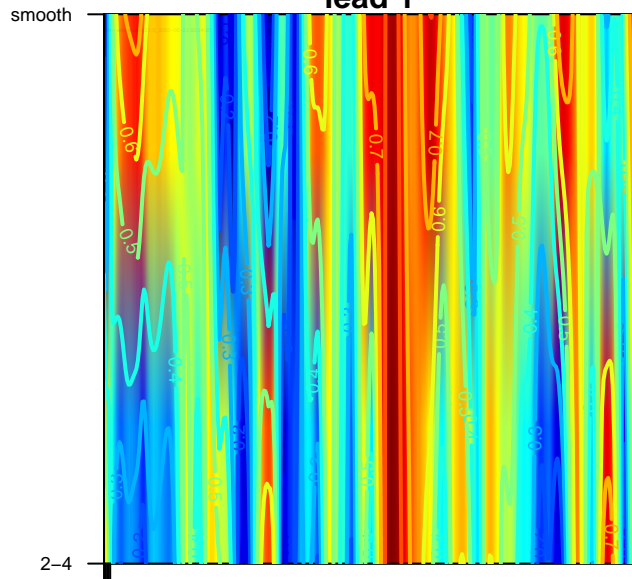
lead / lag



Wavelet Local Multiple Cross-Correlation

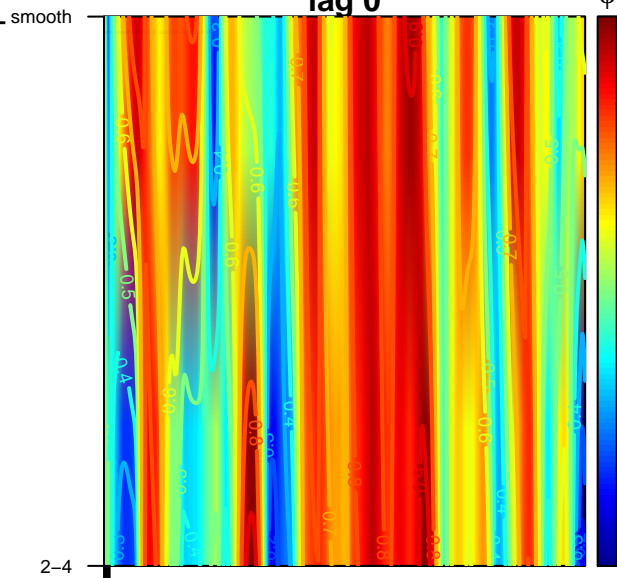
lead 1

lag 1



lag 0

ϕ



0.8

0.6

0.4

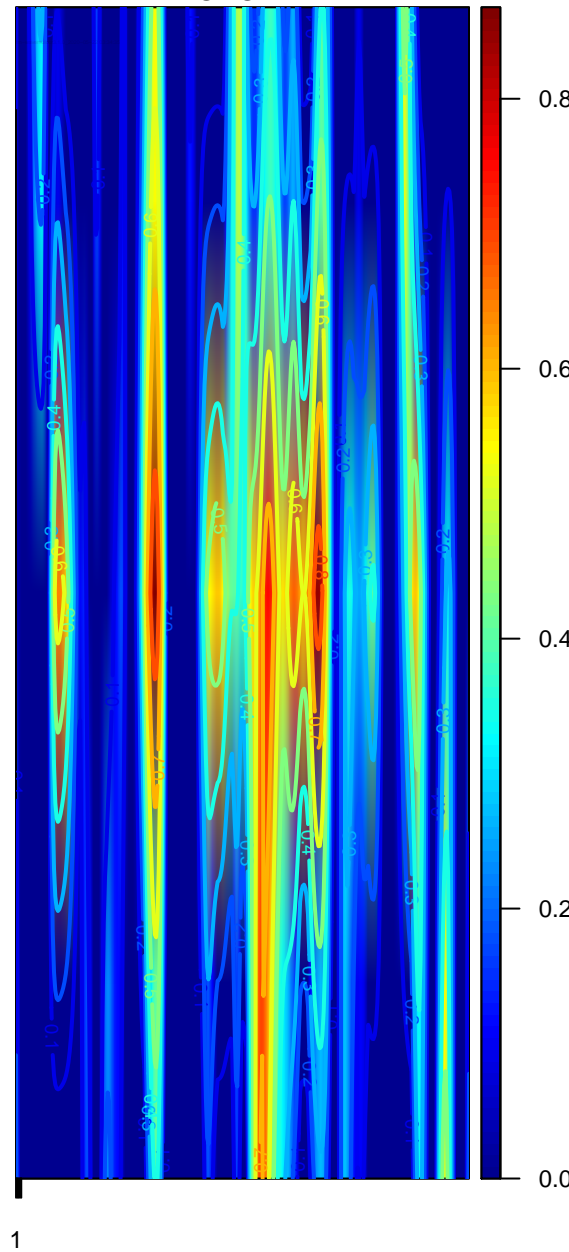
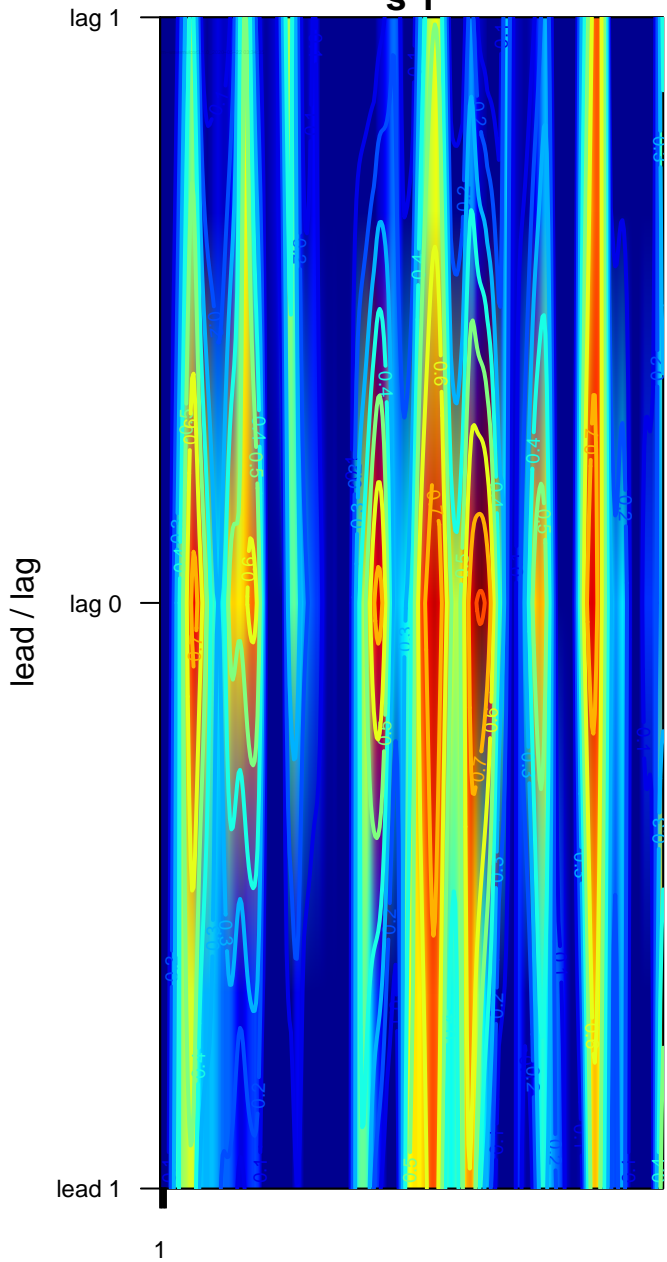
0.2

Wavelet Local Multiple Cross-Correlation

s 1

level 1

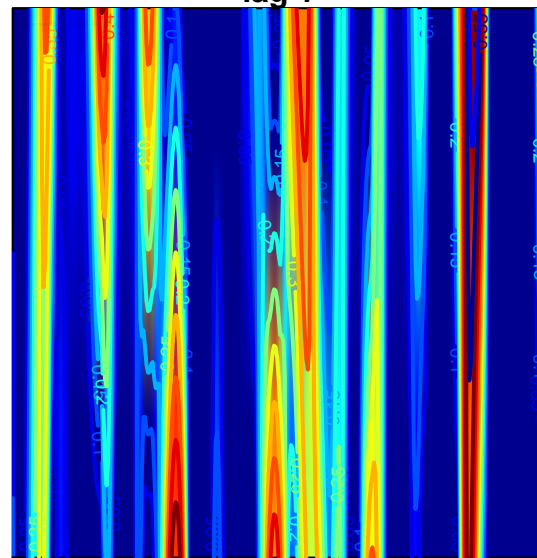
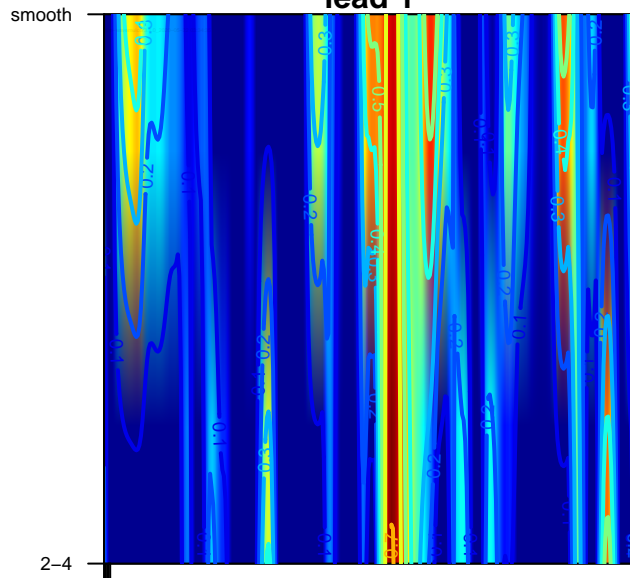
ϕ



Wavelet Local Multiple Cross-Correlation

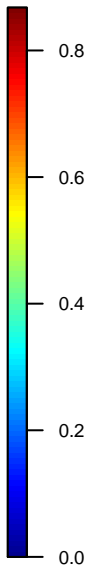
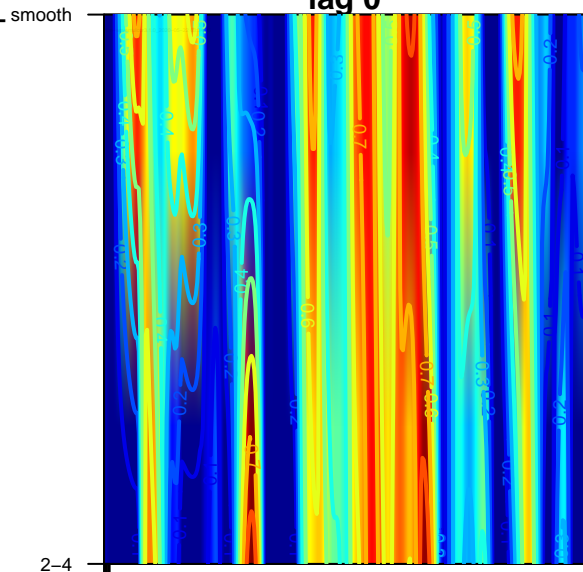
lead 1

lag 1



lag 0

ϕ

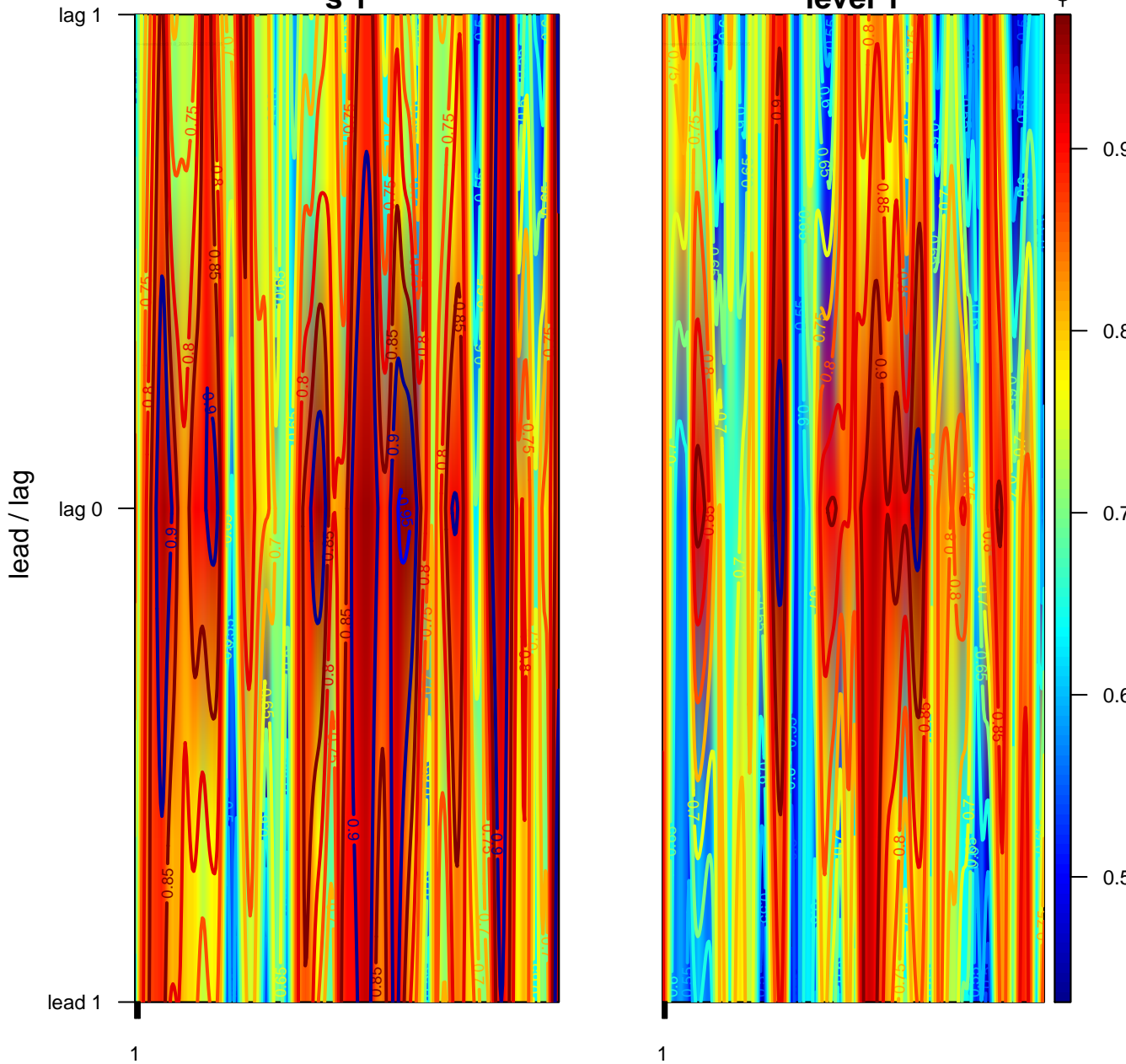


Wavelet Local Multiple Cross-Correlation

s 1

level 1

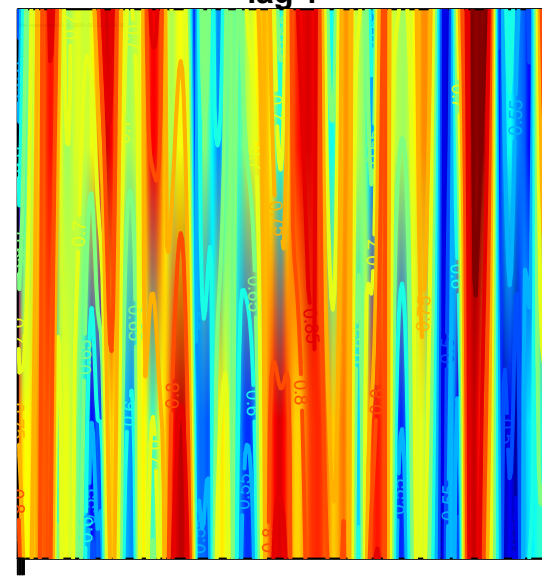
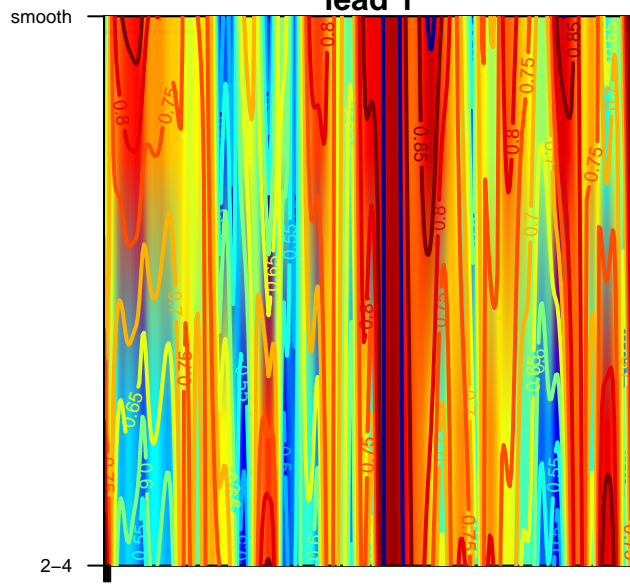
ϕ



Wavelet Local Multiple Cross-Correlation

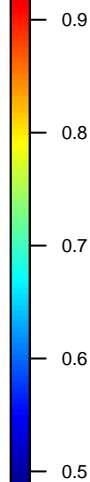
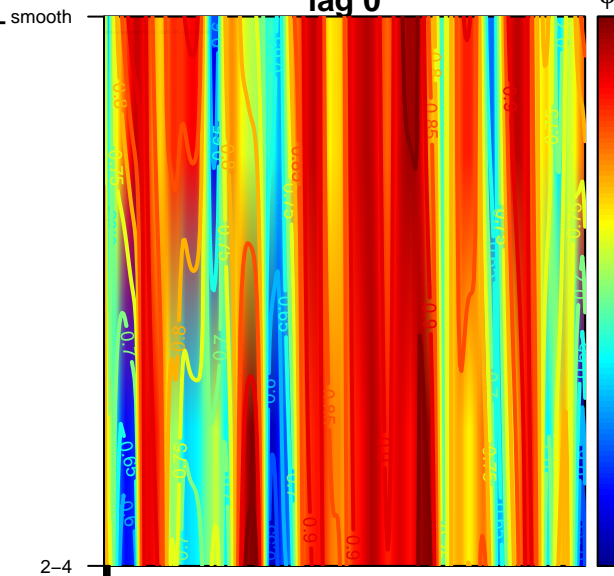
lead 1

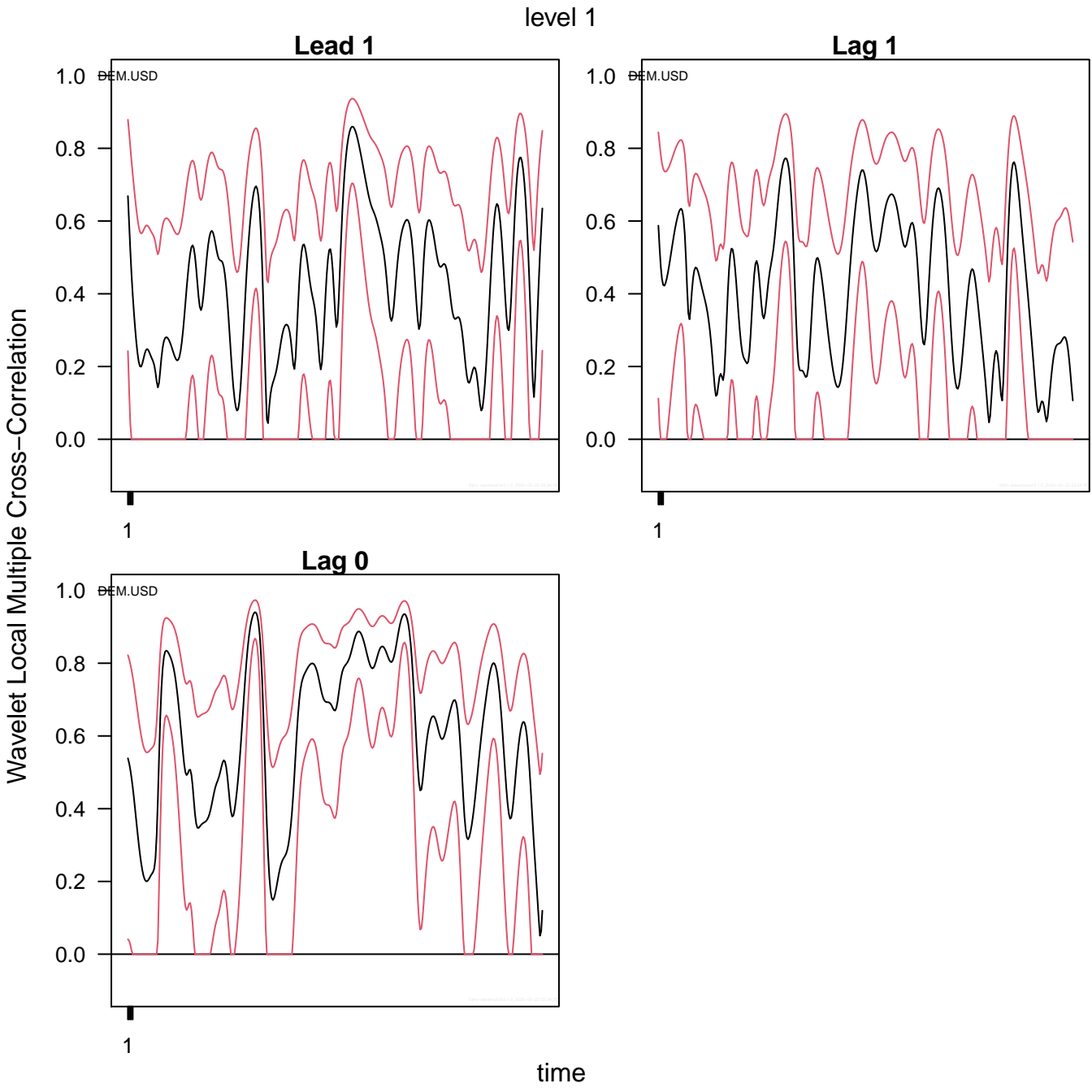
lag 1



lag 0

ϕ



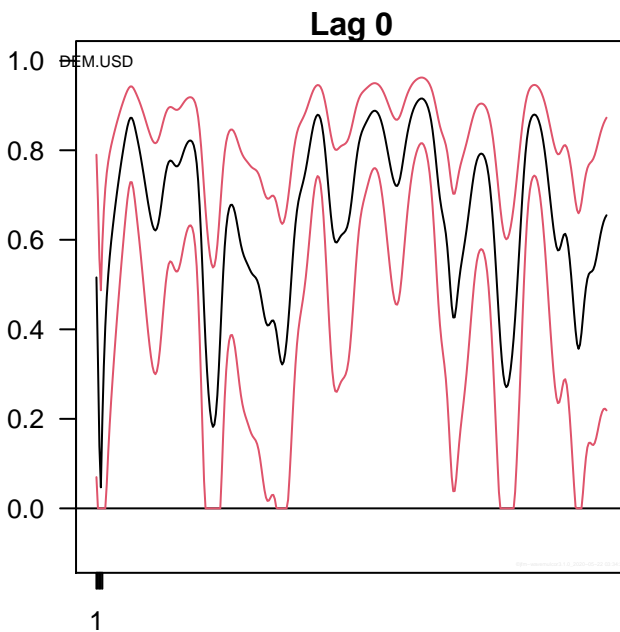
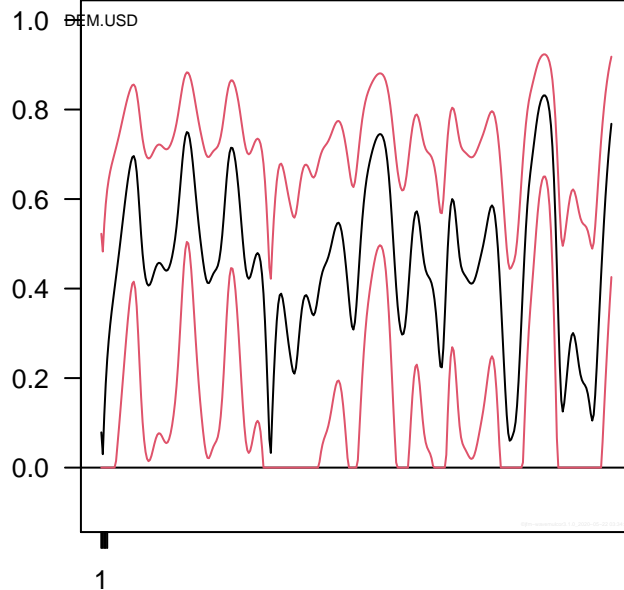
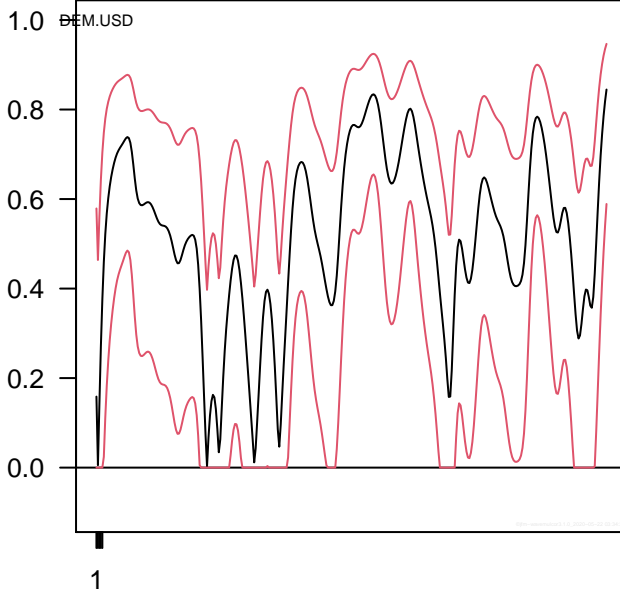


Wavelet Local Multiple Cross-Correlation

s 1

Lead 1

Lag 1



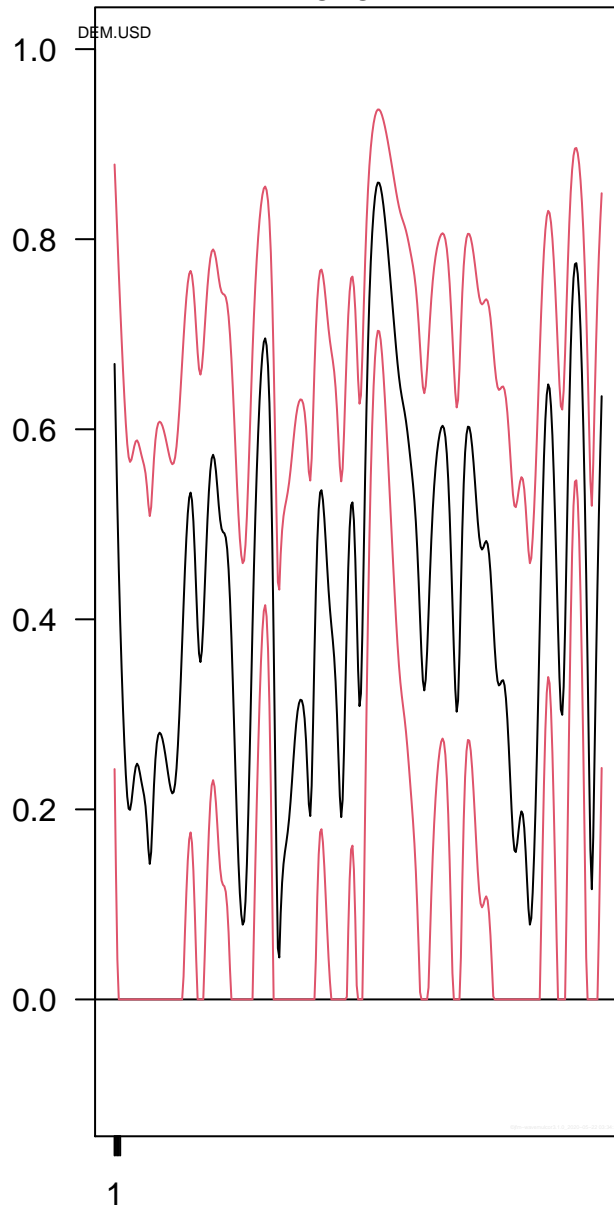
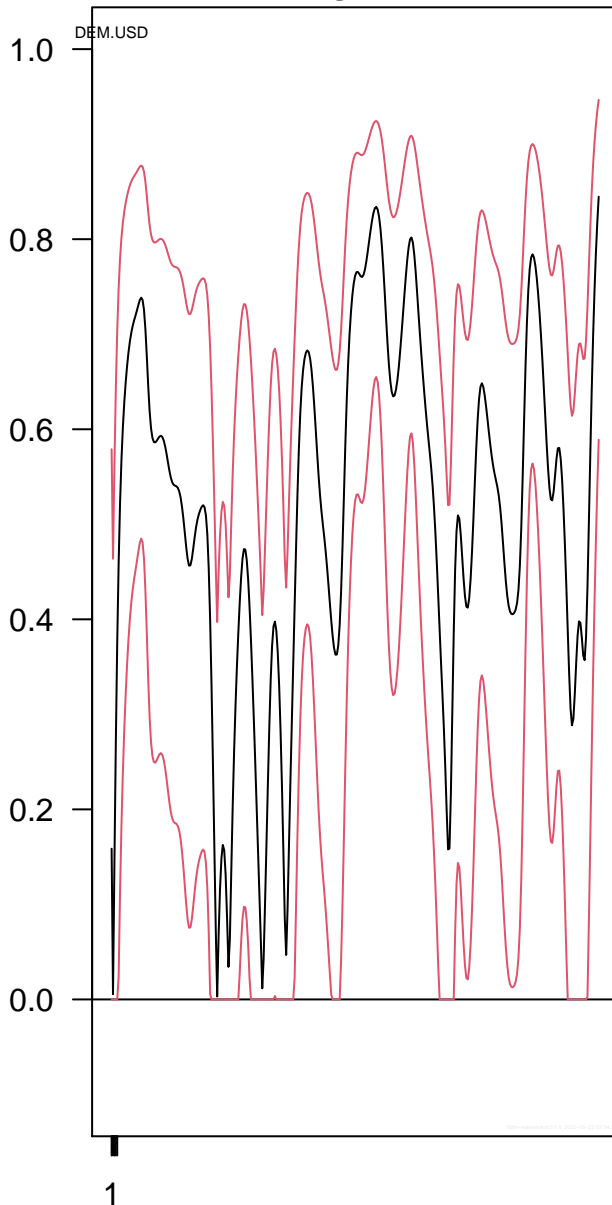
time

Lead 1

s 1

level 1

Wavelet Local Multiple Cross-Correlation

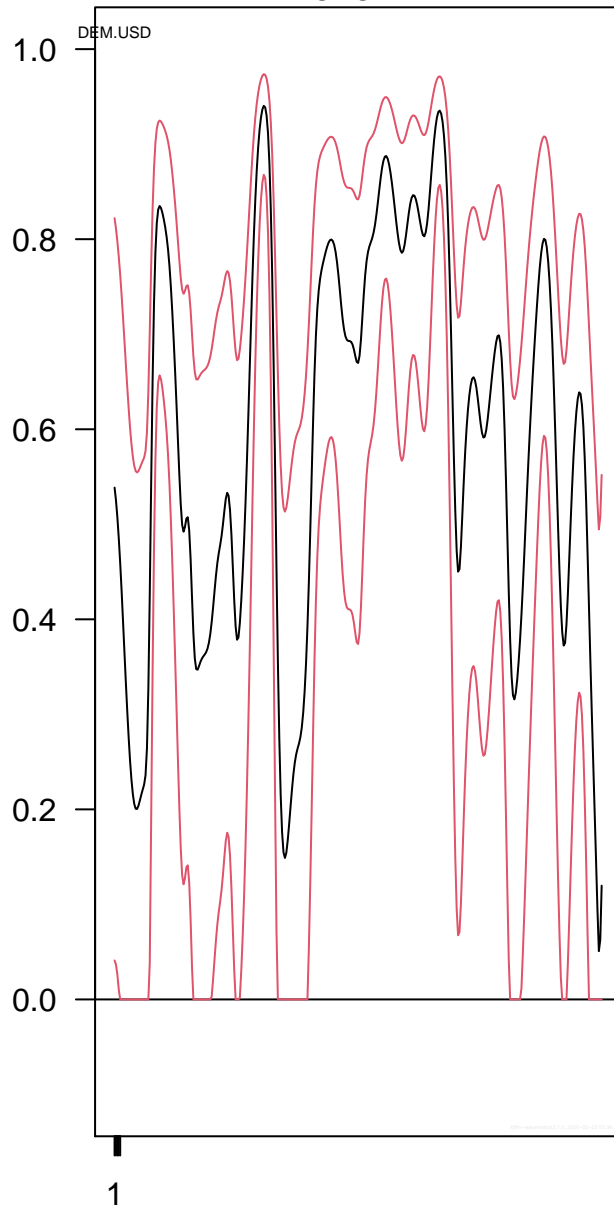
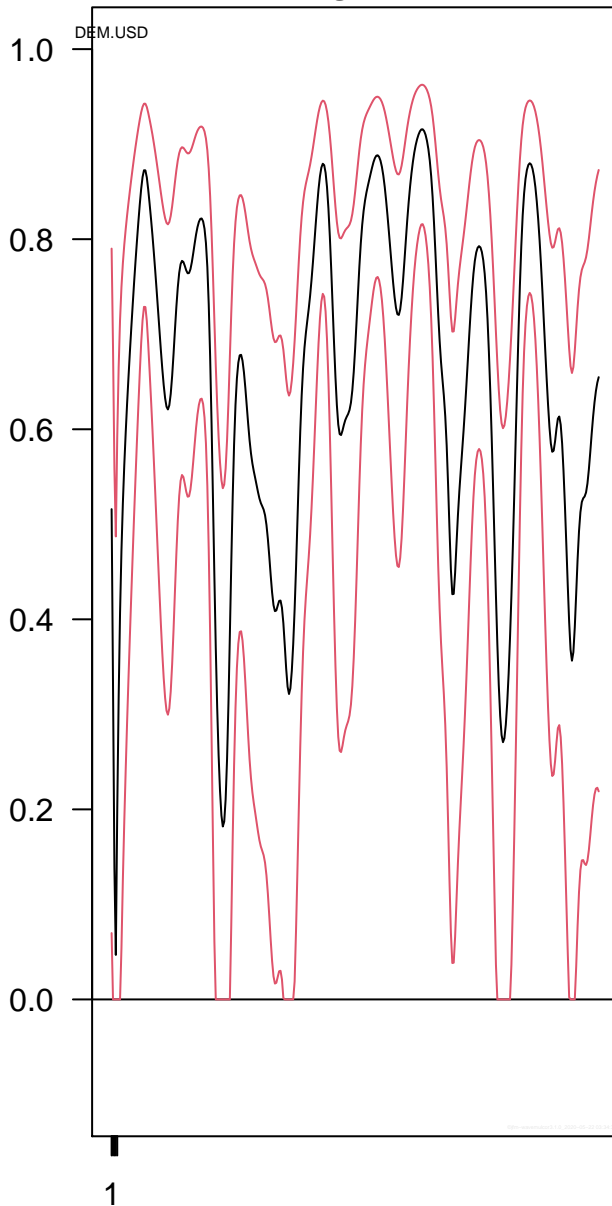


Lag 0

s 1

level 1

Wavelet Local Multiple Cross-Correlation

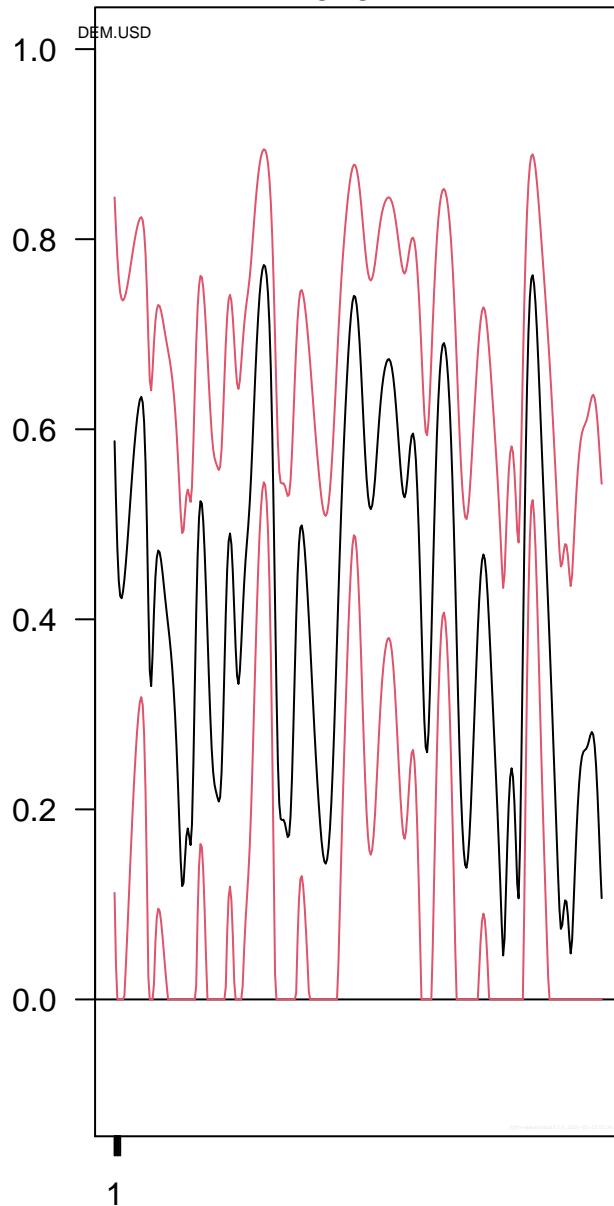
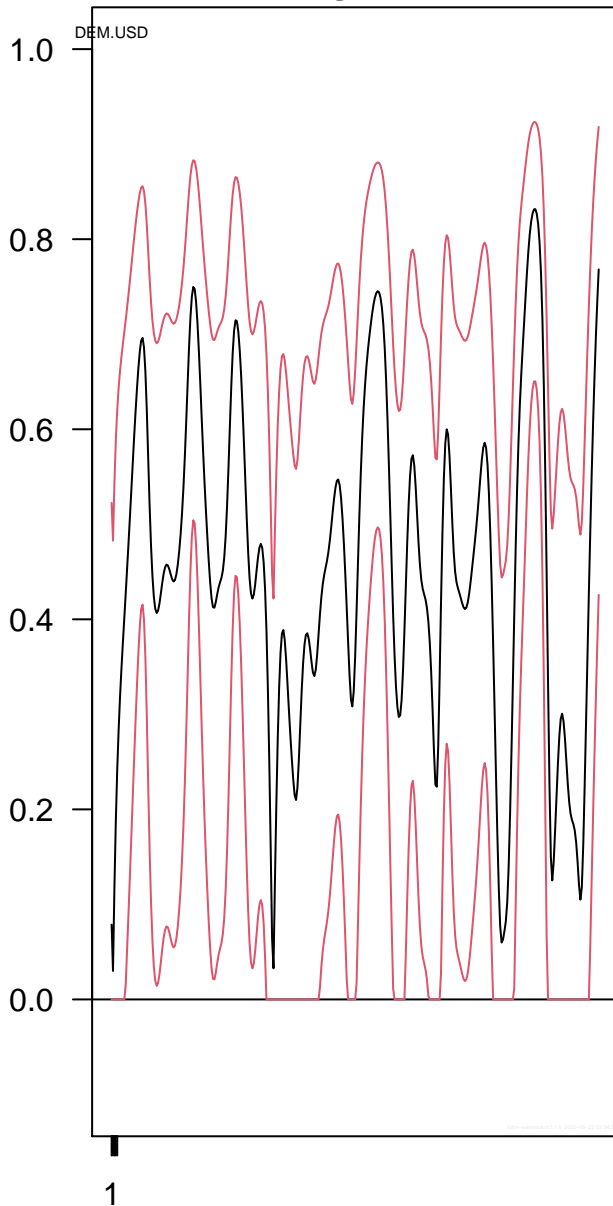


Lag 1

s 1

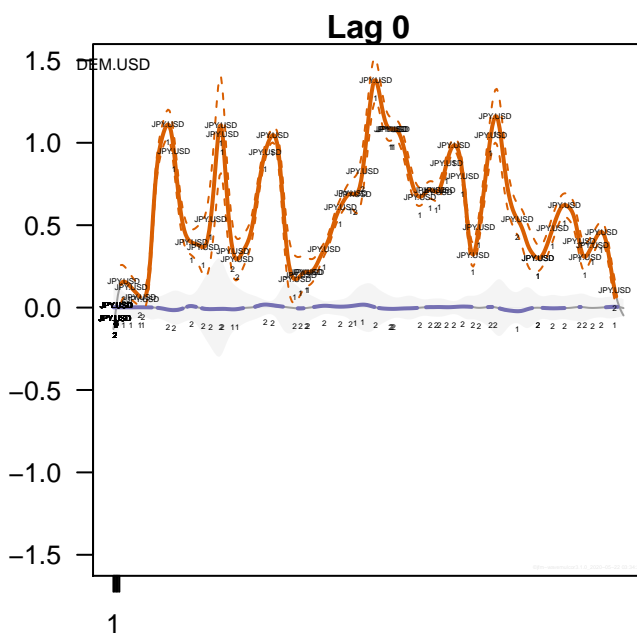
level 1

Wavelet Local Multiple Cross-Correlation



time

Lag 1

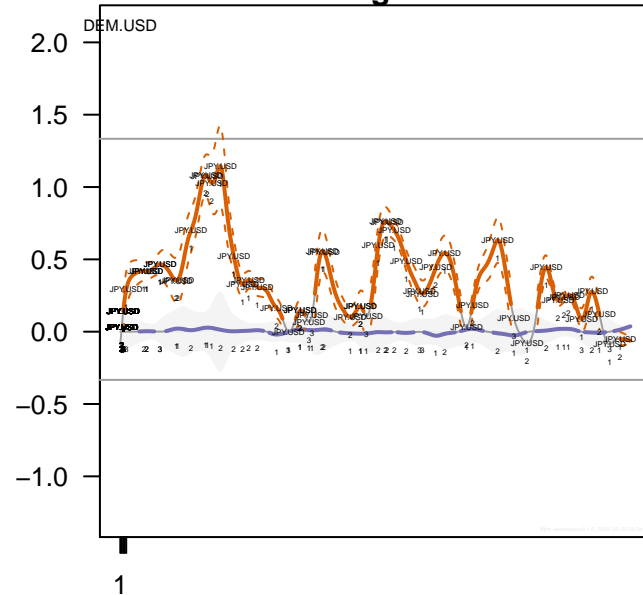
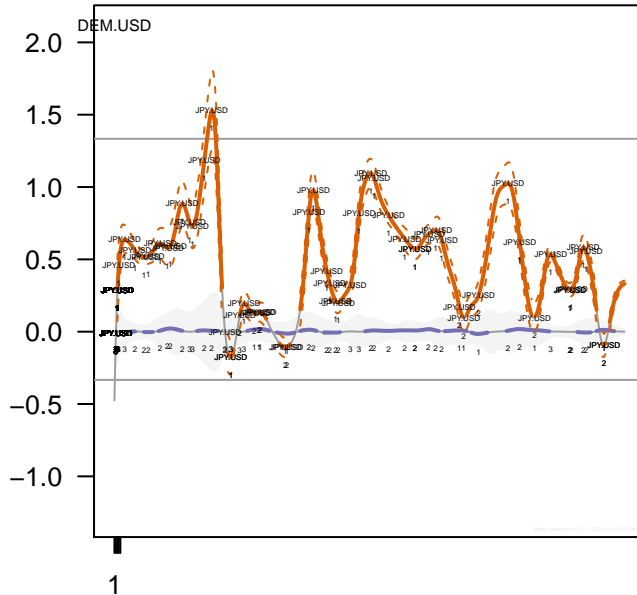


s 1

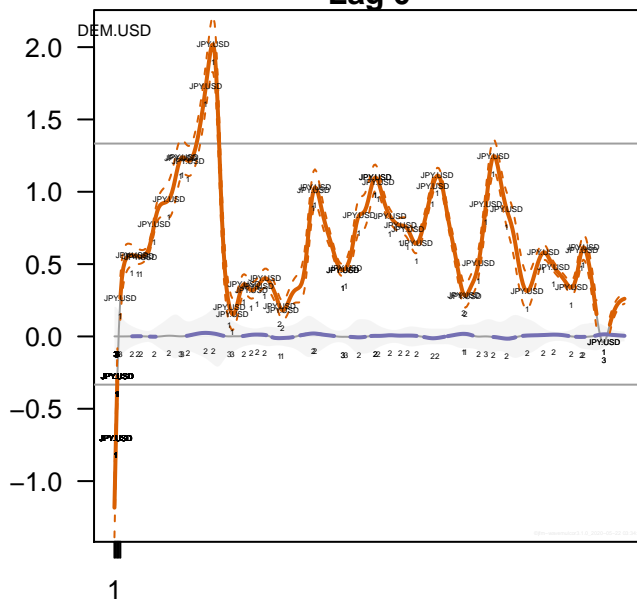
Lead 1

Lag 1

Wavelet Local Multiple Cross-Regression



Lag 0



time