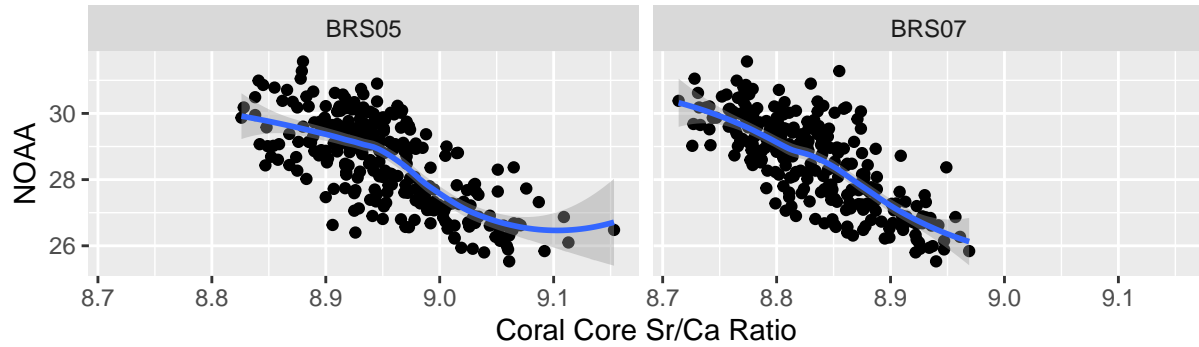


Coral Core Calibration and Frequency Analysis

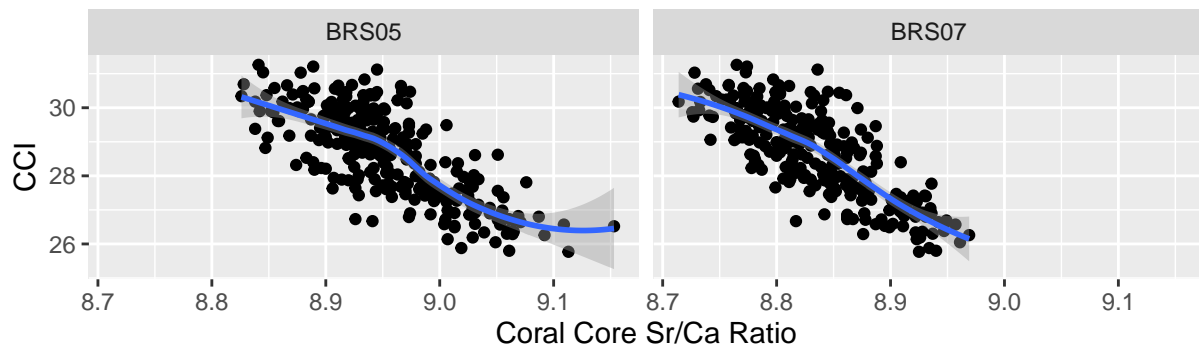
Vanessa Hui Fen Neo

2021-11-24

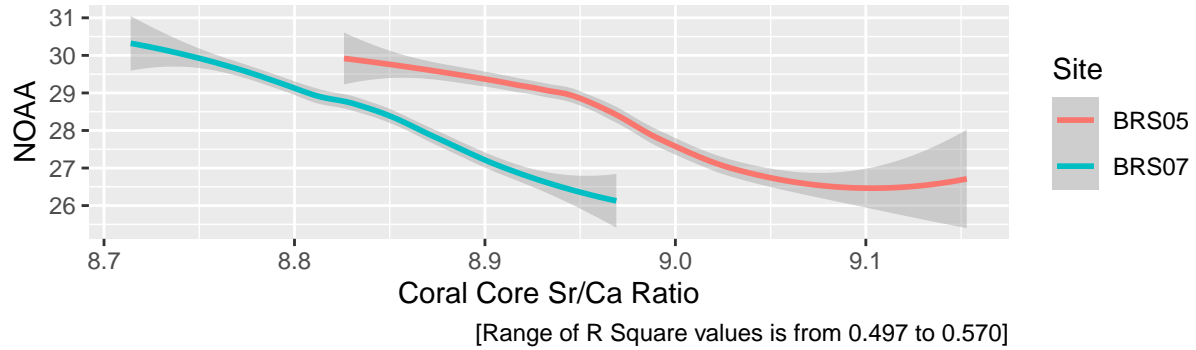
Browse Island NOAA SST and Coral Core Proxy



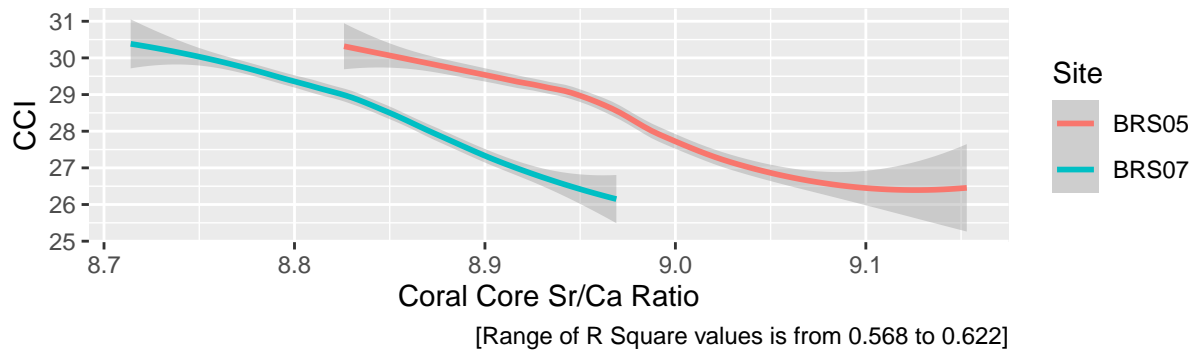
Browse Island CCI SST and Coral Core Proxy



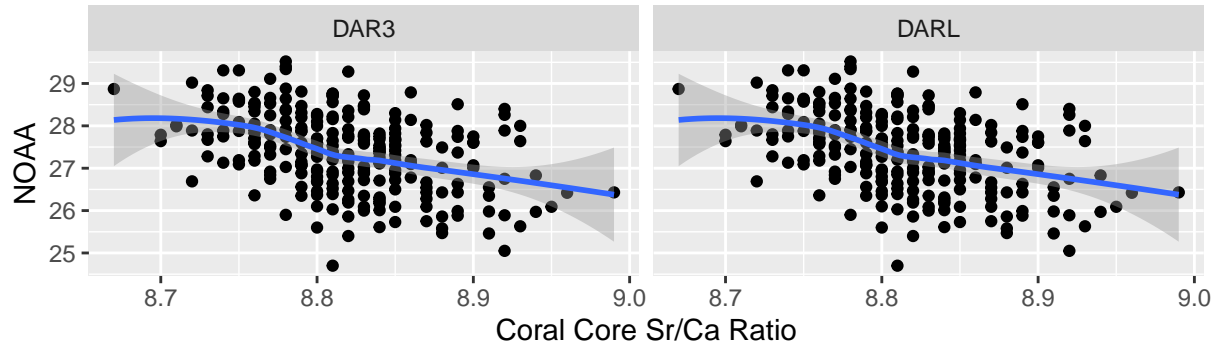
Browse Island NOAA SST and Coral Core Proxy



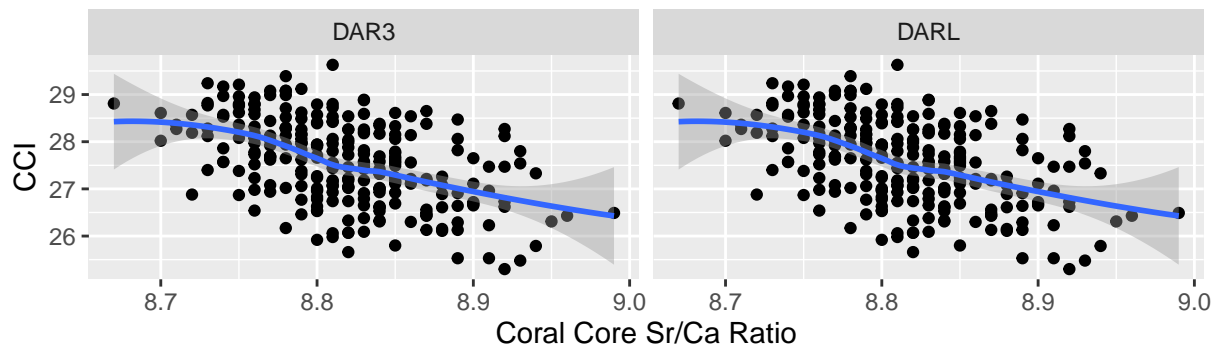
Browse Island CCI SST and Coral Core Proxy

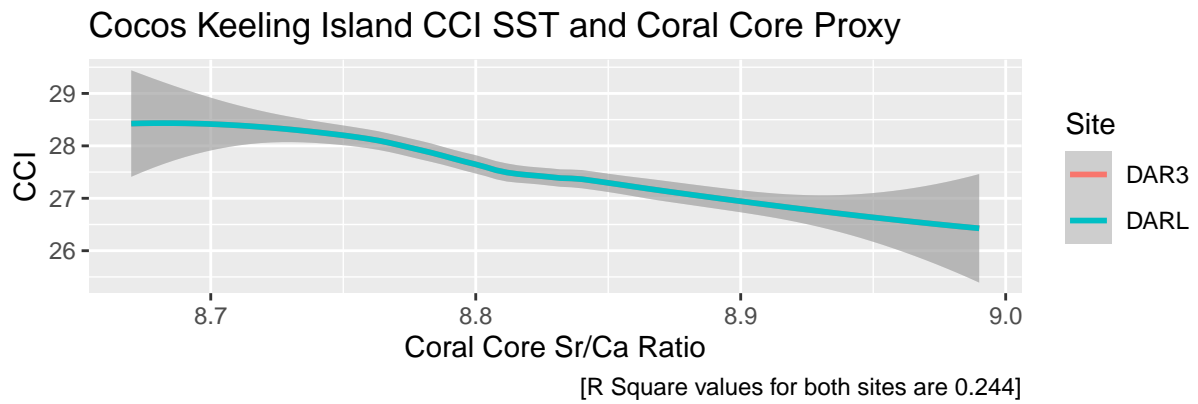
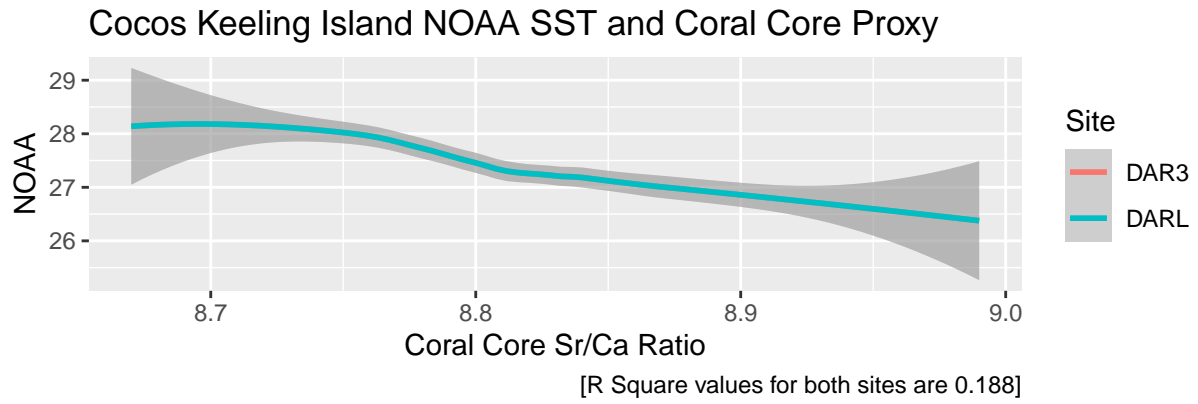


Cocos Keeling Island NOAA SST and Coral Core Proxy

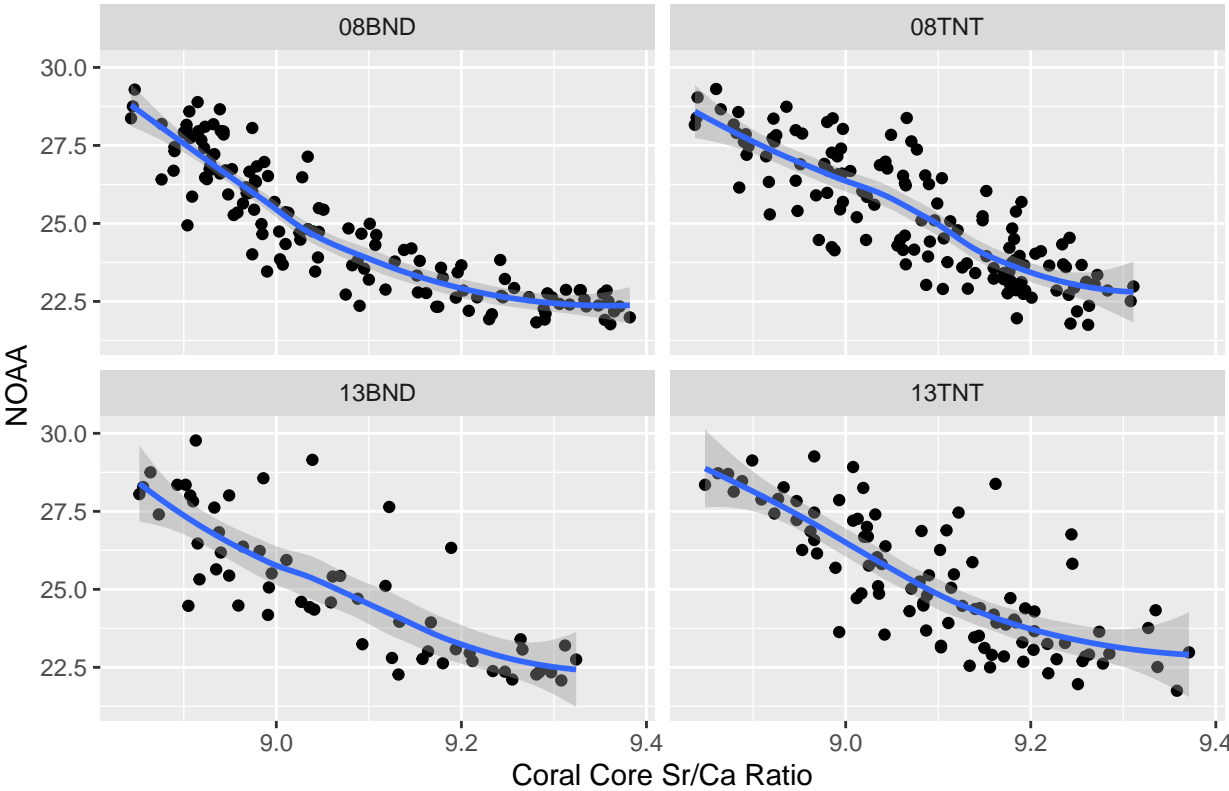


Cocos Keeling Island CCI SST and Coral Core Proxy

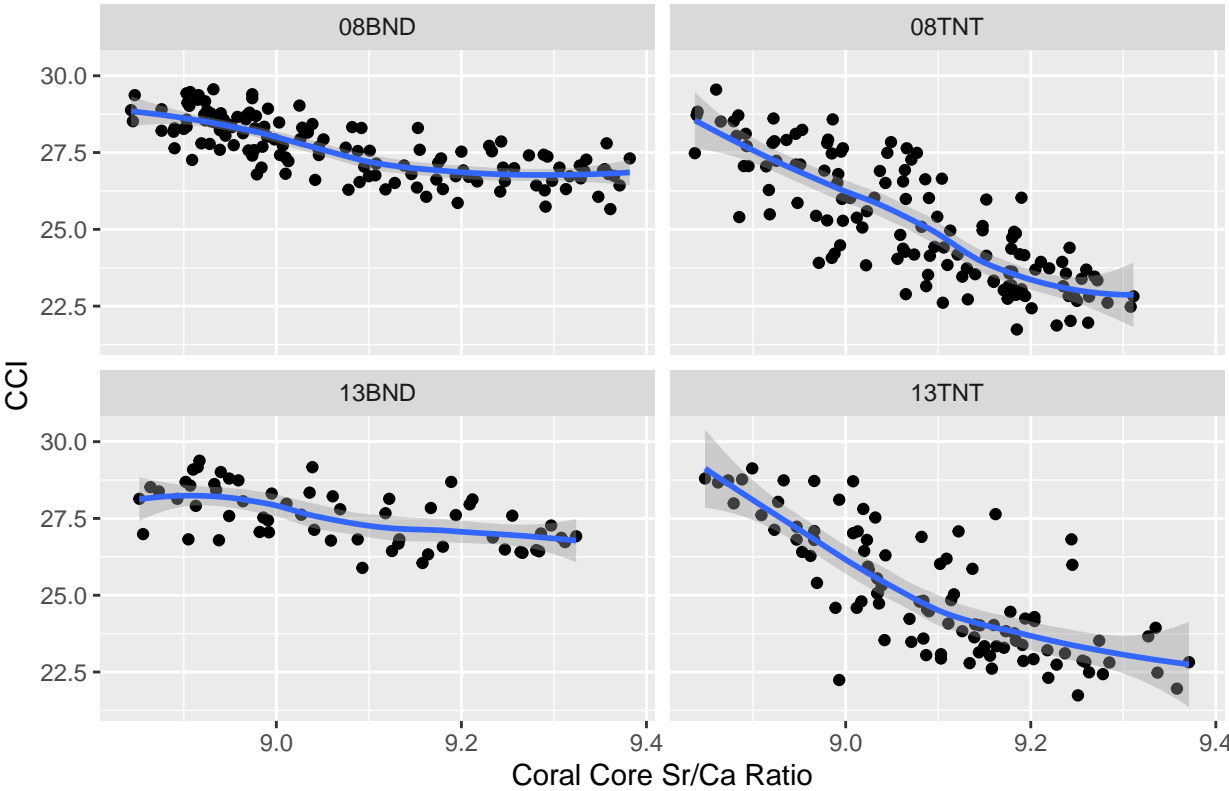




Ningaloo Reef NOAA SST and Coral Core Proxy



Ningaloo Reef CCI SST and Coral Core Proxy



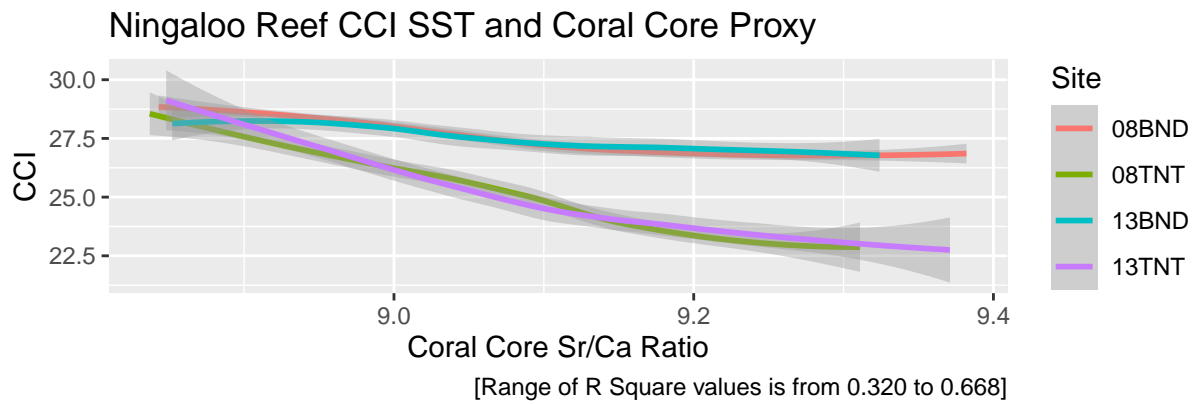
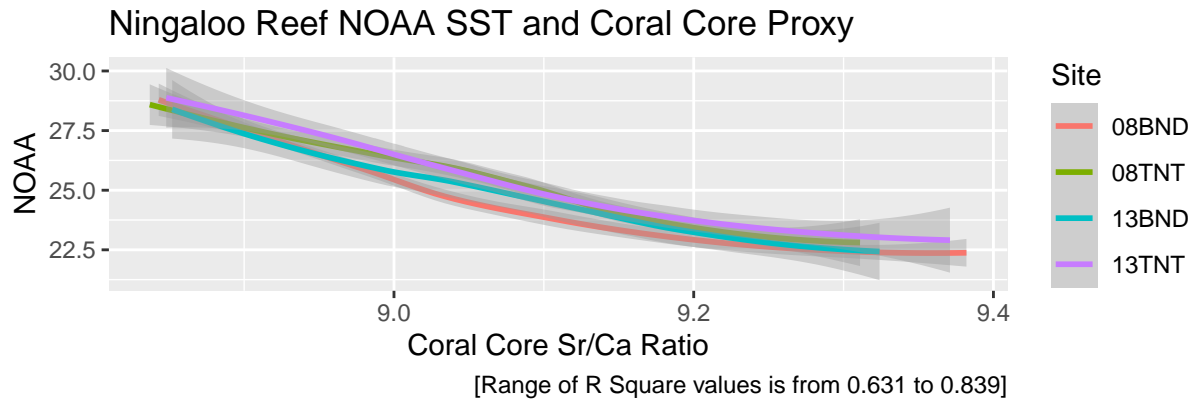


Table 1: NOAA

| | Browse | | Cocos Keeling | | Ningaloo | | | |
|------------|--------------------|--------------------|-------------------|-------------------|-----------------------|--------------------|--------------------|----------------------|
| | BRS05 | BRS07 | DARL | DAR3 | 13TNT | 08TNT | 13BND | 08BND |
| L_Browse | -15.892 (0.968) | -18.394 (0.967) | | | | | | |
| L_Cocos | | | -7.413 (0.957) | -7.413 (0.957) | | | | |
| L_Ningaloo | | | | | -344.021 (129.197) | -13.498 (0.762) | -12.655 (1.170) | -502.398 (68.200) |
| Q_Ningaloo | | | | | 18.191 (7.096) | | | 26.896 (3.741) |
| Num.Obs. | 273 | 273 | 255 | 255 | 98 | 135 | 60 | 133 |
| R2 | 0.499 | 0.572 | 0.192 | 0.192 | 0.639 | 0.702 | 0.668 | 0.842 |
| R2 Adj. | 0.497 | 0.570 | 0.188 | 0.188 | 0.631 | 0.700 | 0.663 | 0.839 |
| AIC | 748.8 | 705.7 | 632.0 | 632.0 | 321.9 | 406.1 | 204.6 | 338.5 |

Table 2: CCI

| | Browse | | Cocos Keeling | | Ningaloo | | | |
|------------|--------------------|----------------------|-------------------|-------------------|-----------------------|--------------------|-------------------|----------------------|
| | BRS05 | BRS07 | DARL | DAR3 | 13TNT | 08TNT | 13BND | 08BND |
| L_Browse | -16.577 (0.875) | 531.158 (247.970) | | | | | | |
| Q_Browse | | -31.095 (14.024) | | | | | | |
| L_Cocos | | | -8.096 (0.890) | -8.096 (0.890) | | | | |
| L_Ningaloo | | | | | -435.076 (131.135) | -13.400 (0.815) | -3.654 (0.682) | -185.807 (49.633) |
| Q_Ningaloo | | | | | 23.210 (7.203) | | | 9.946 (2.723) |
| Num.Obs. | 273 | 273 | 255 | 255 | 98 | 135 | 60 | 133 |
| R2 | 0.570 | 0.624 | 0.247 | 0.247 | 0.626 | 0.671 | 0.331 | 0.580 |
| R2 Adj. | 0.568 | 0.622 | 0.244 | 0.244 | 0.618 | 0.668 | 0.320 | 0.574 |
| AIC | 693.4 | 658.5 | 594.6 | 594.6 | 324.8 | 424.0 | 139.8 | 253.9 |

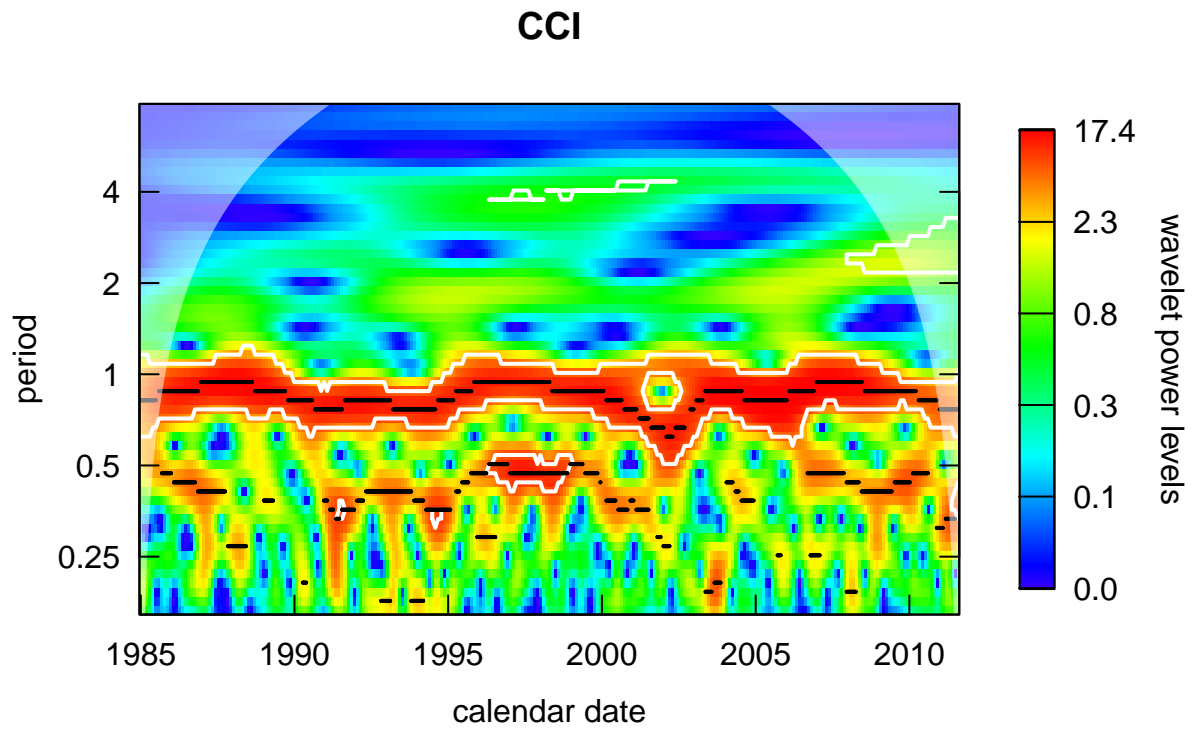
Frequency Analysis - Spectral Analysis of Time Series for Sr/Ca Coral Proxy sites

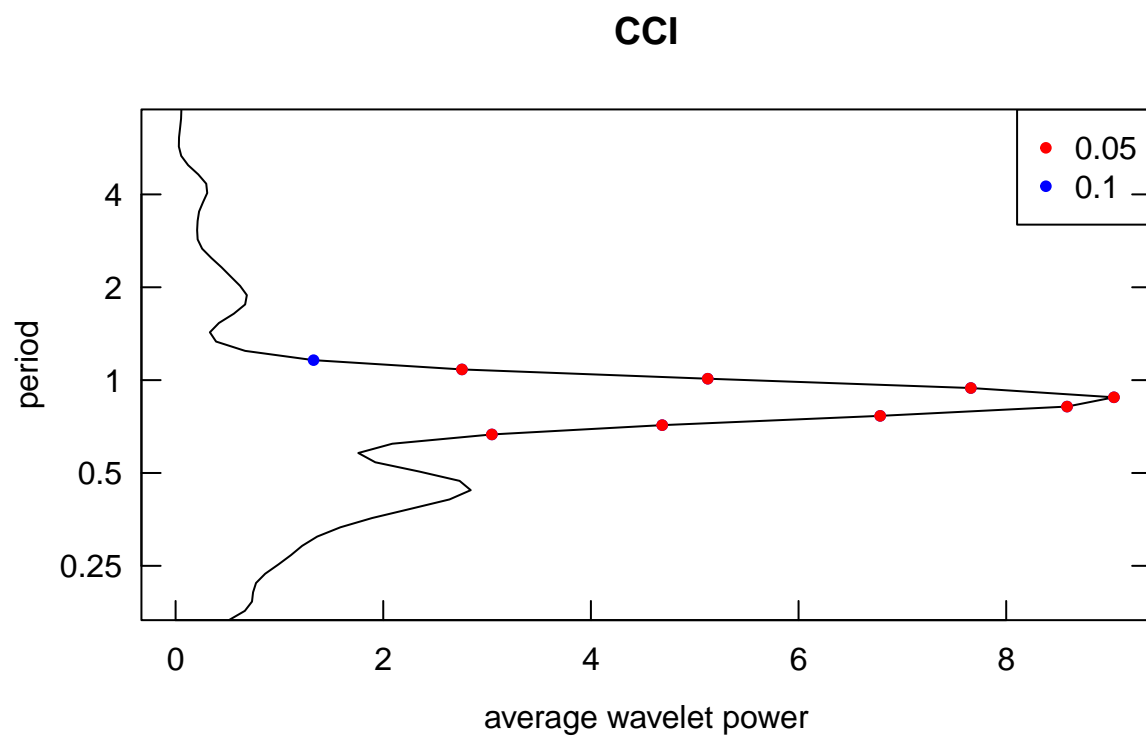
Monthly Coral Core Proxy Sites

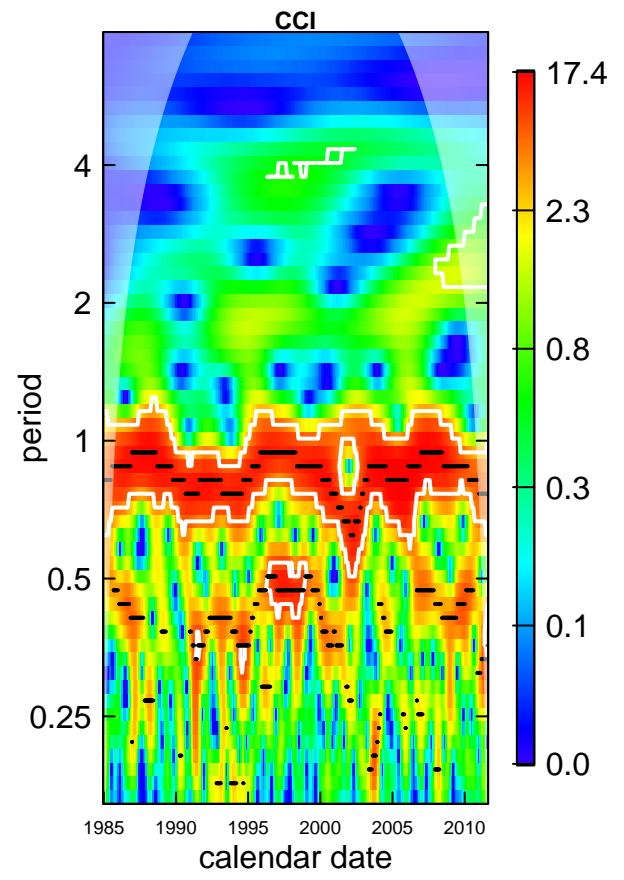
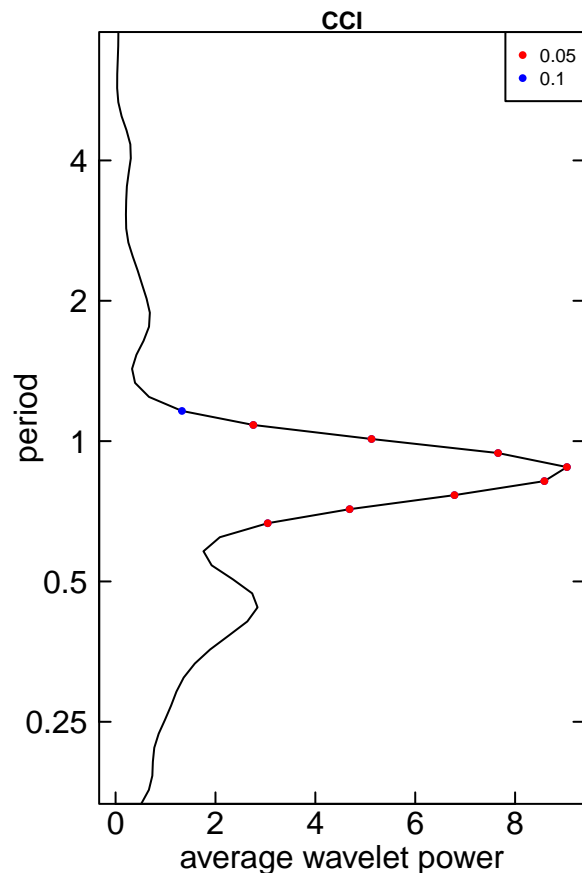
BRS05

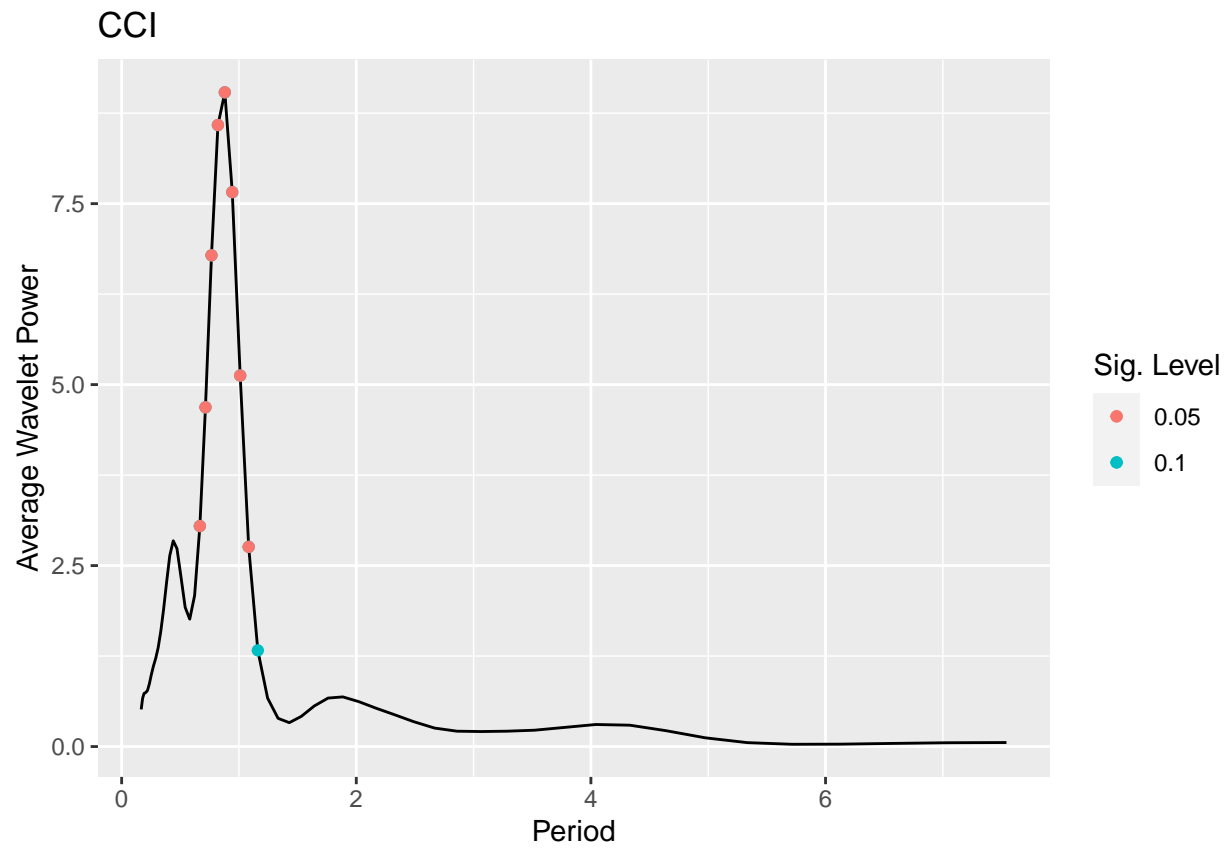
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```

|



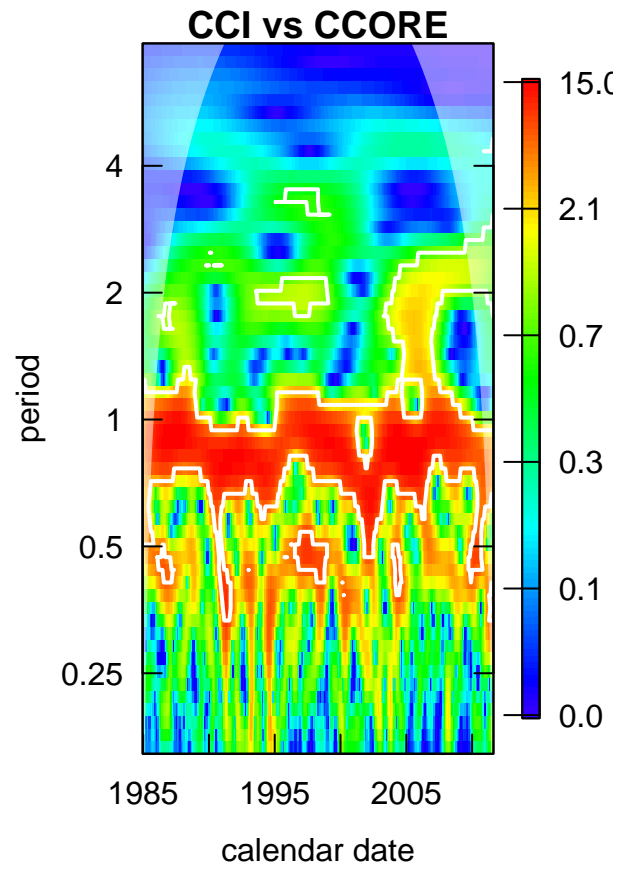
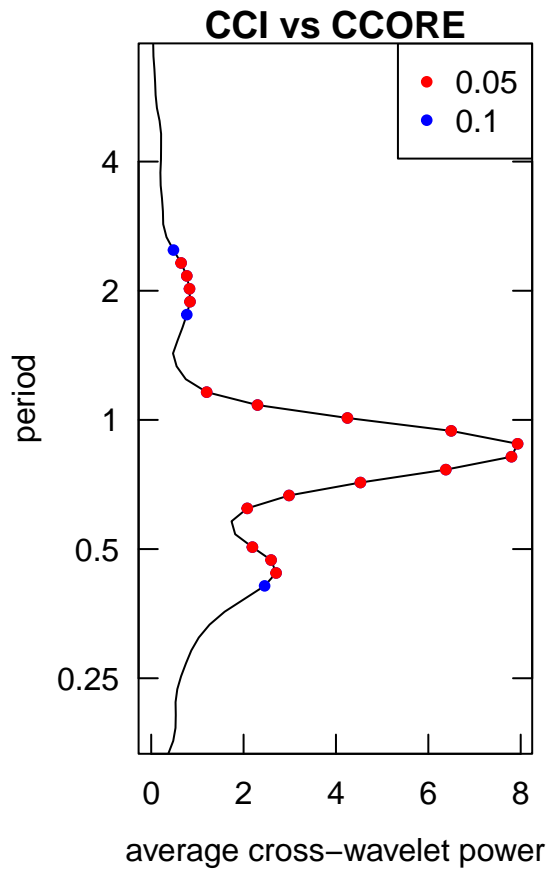


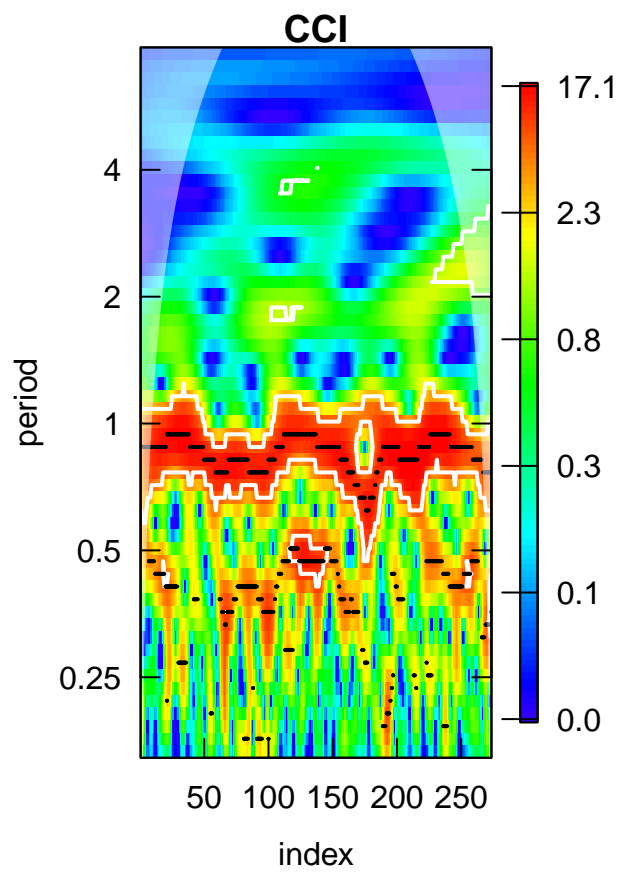


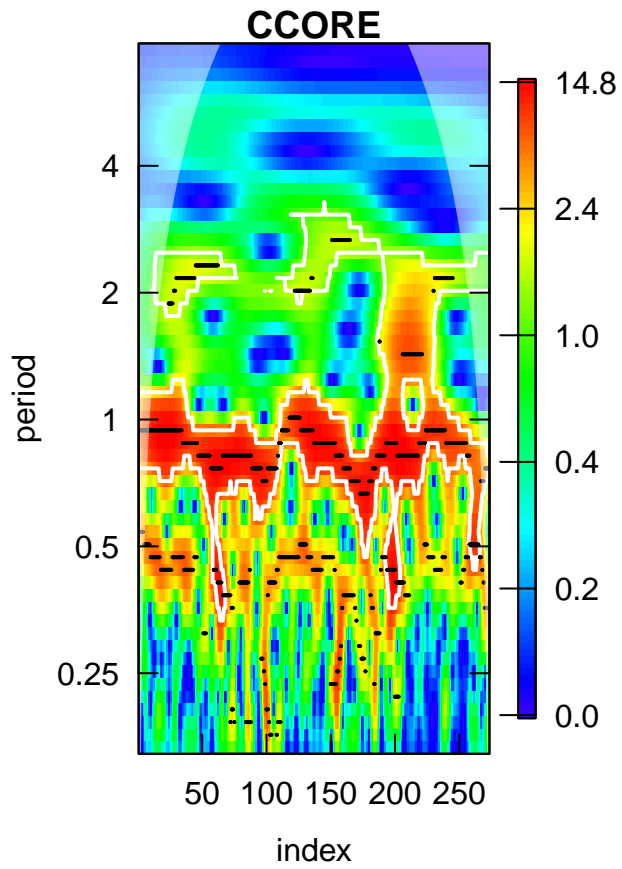


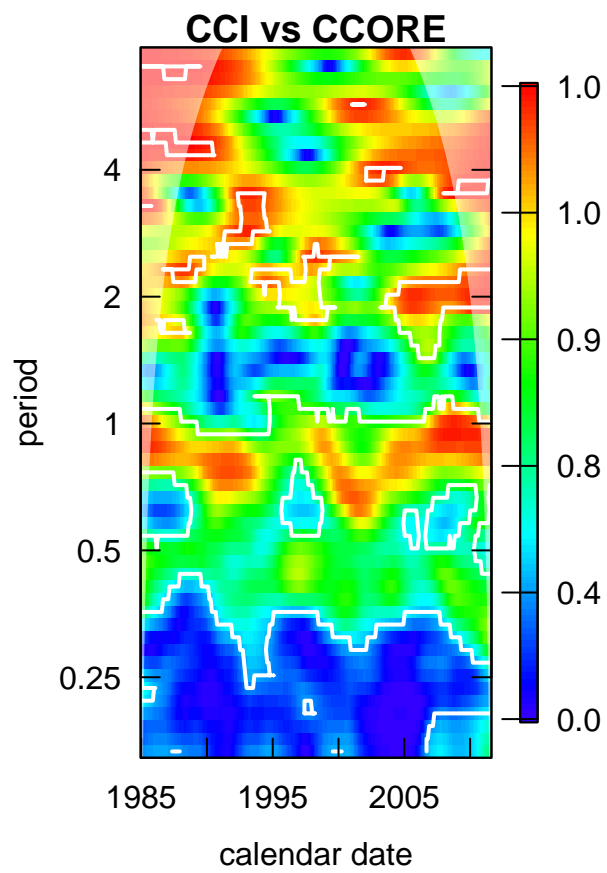
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

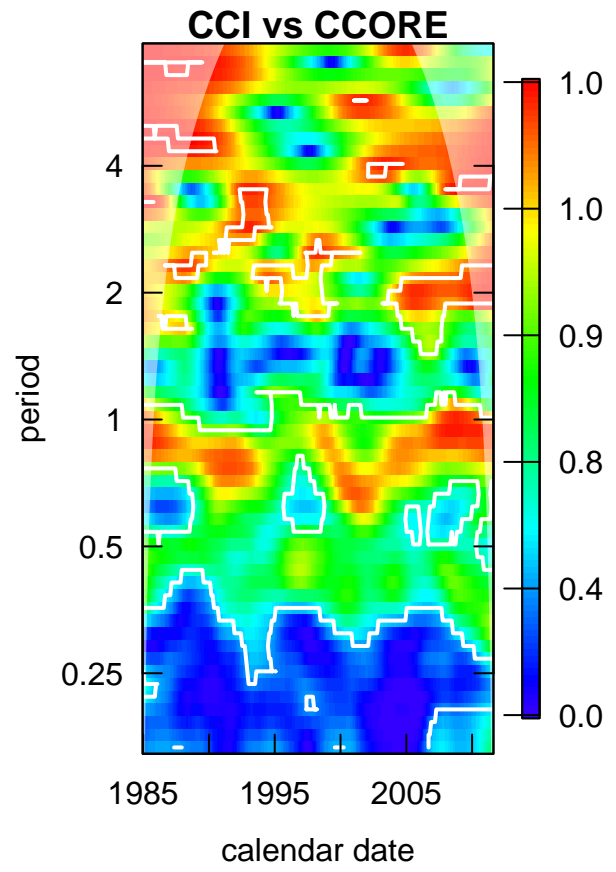
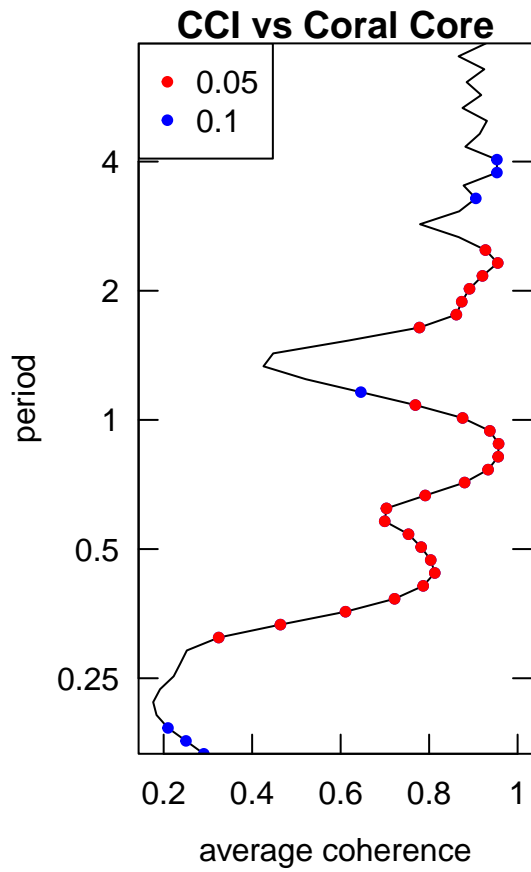
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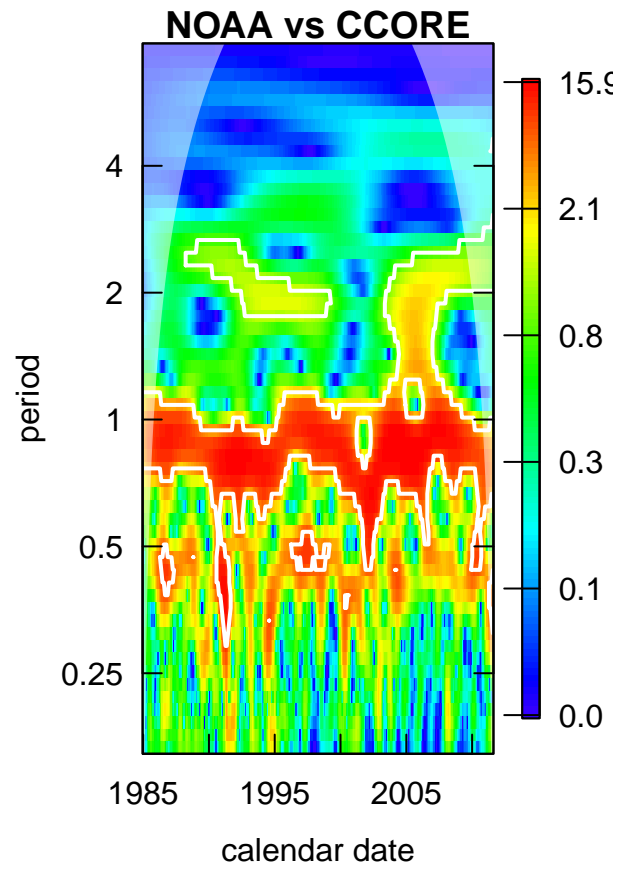
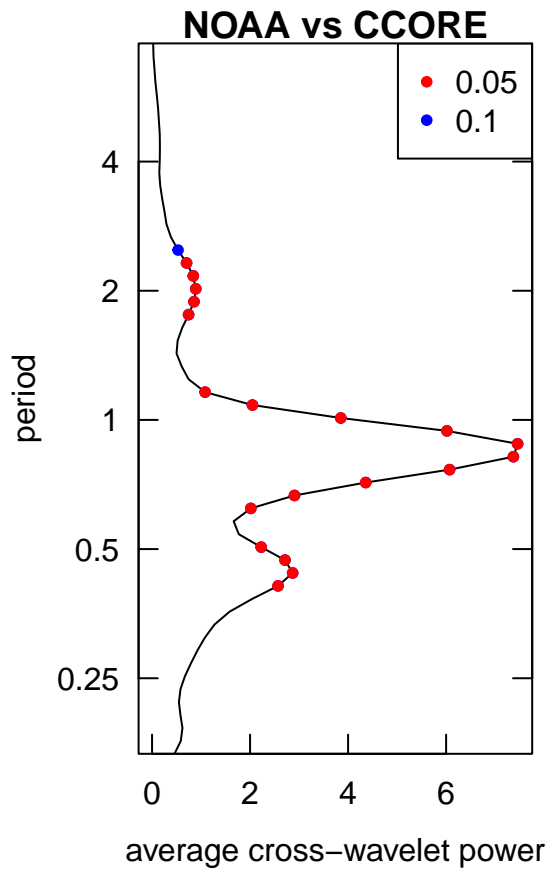


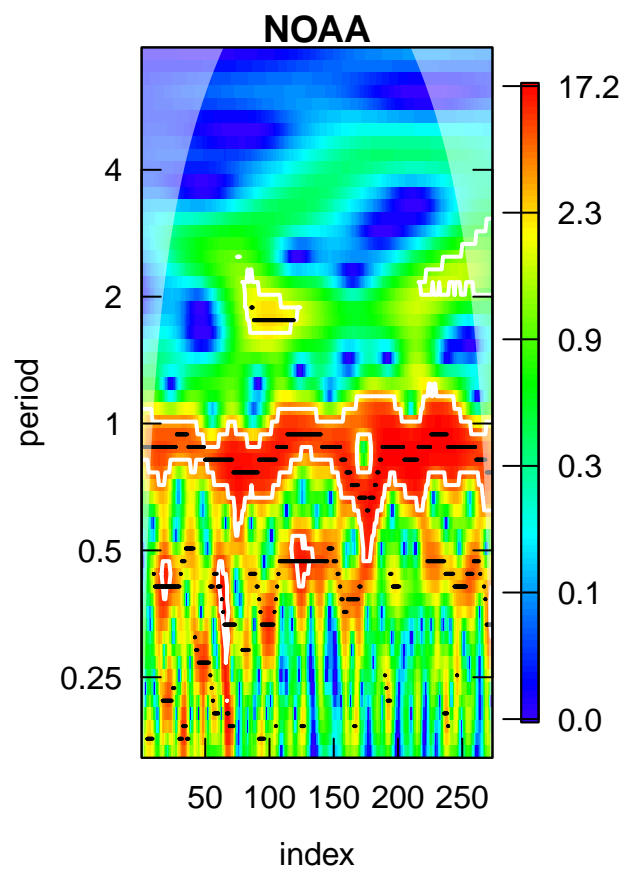


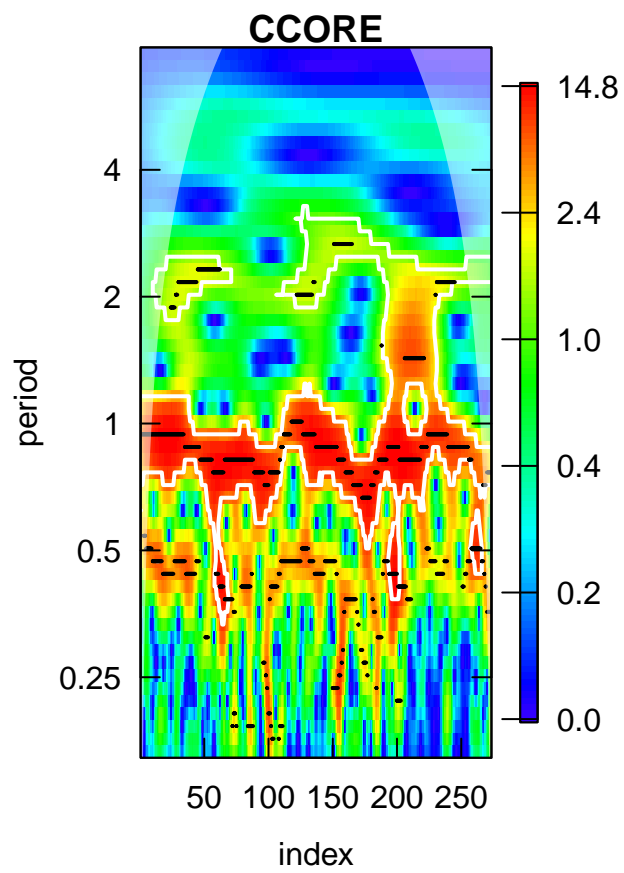


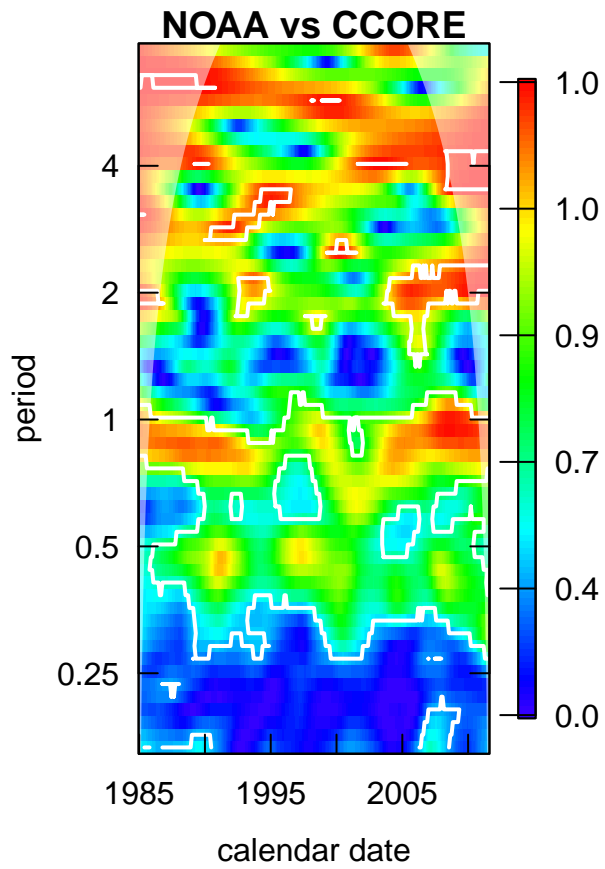
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

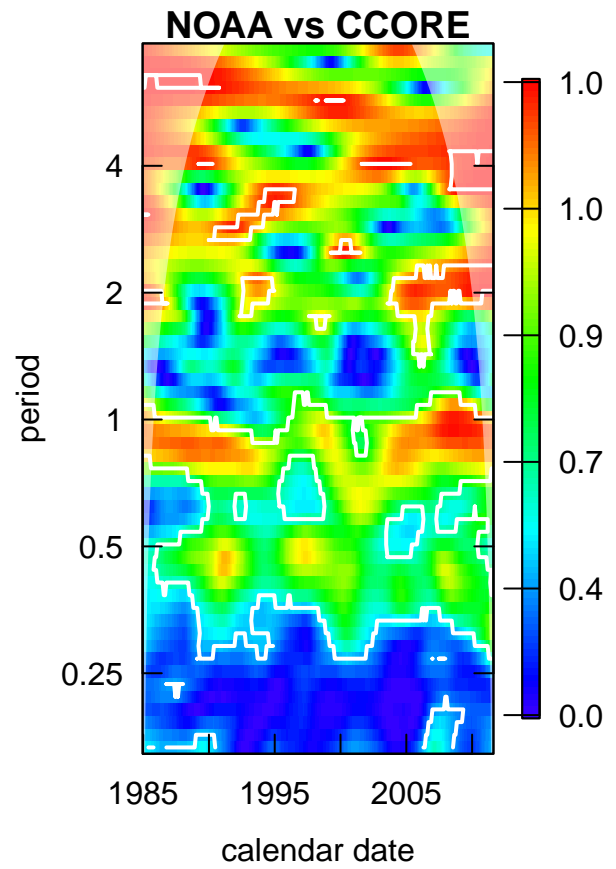
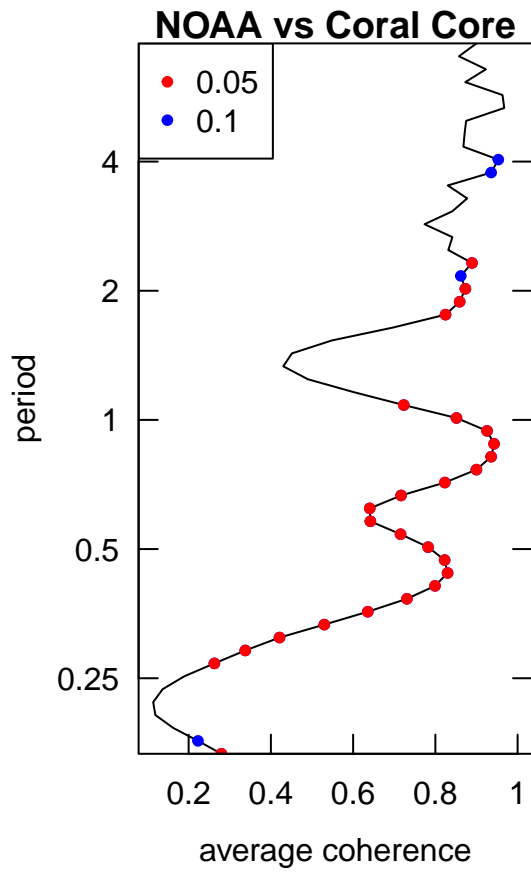
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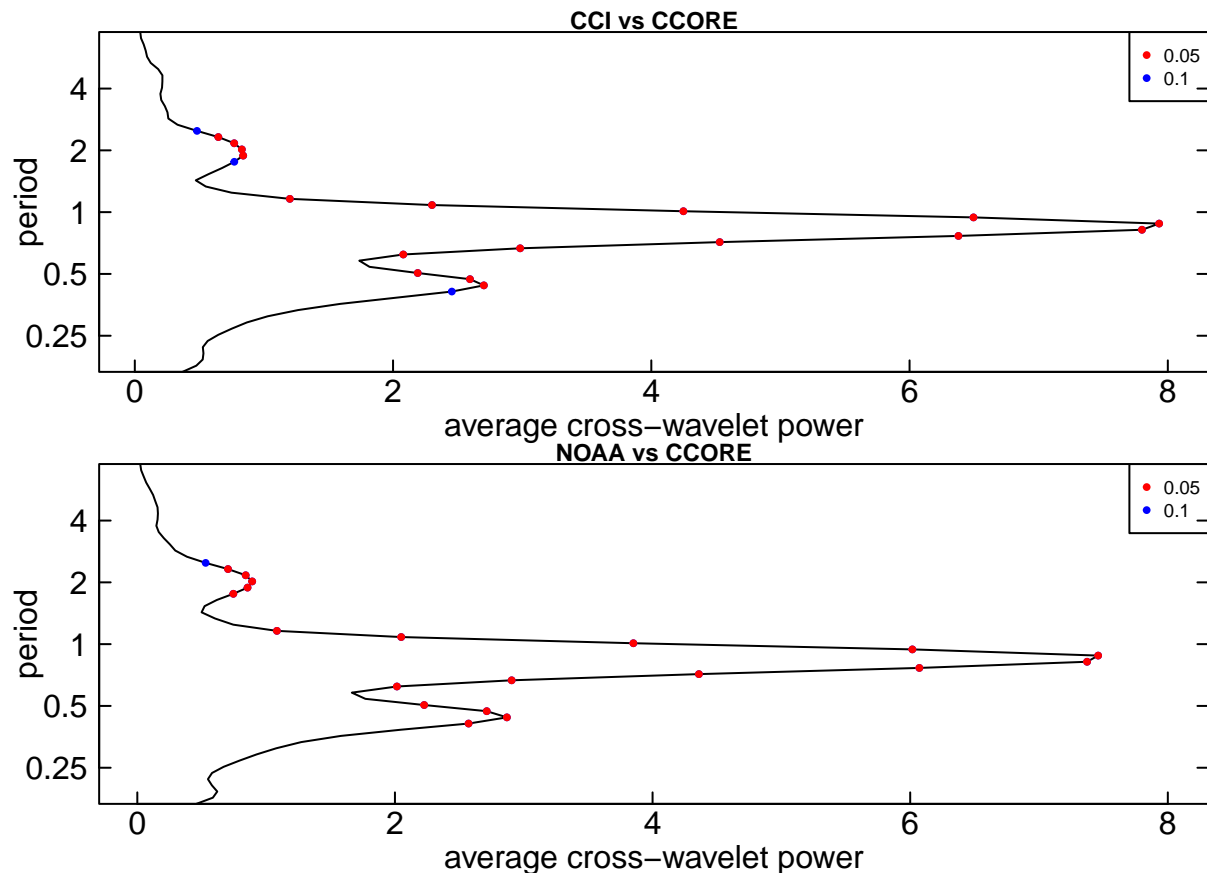


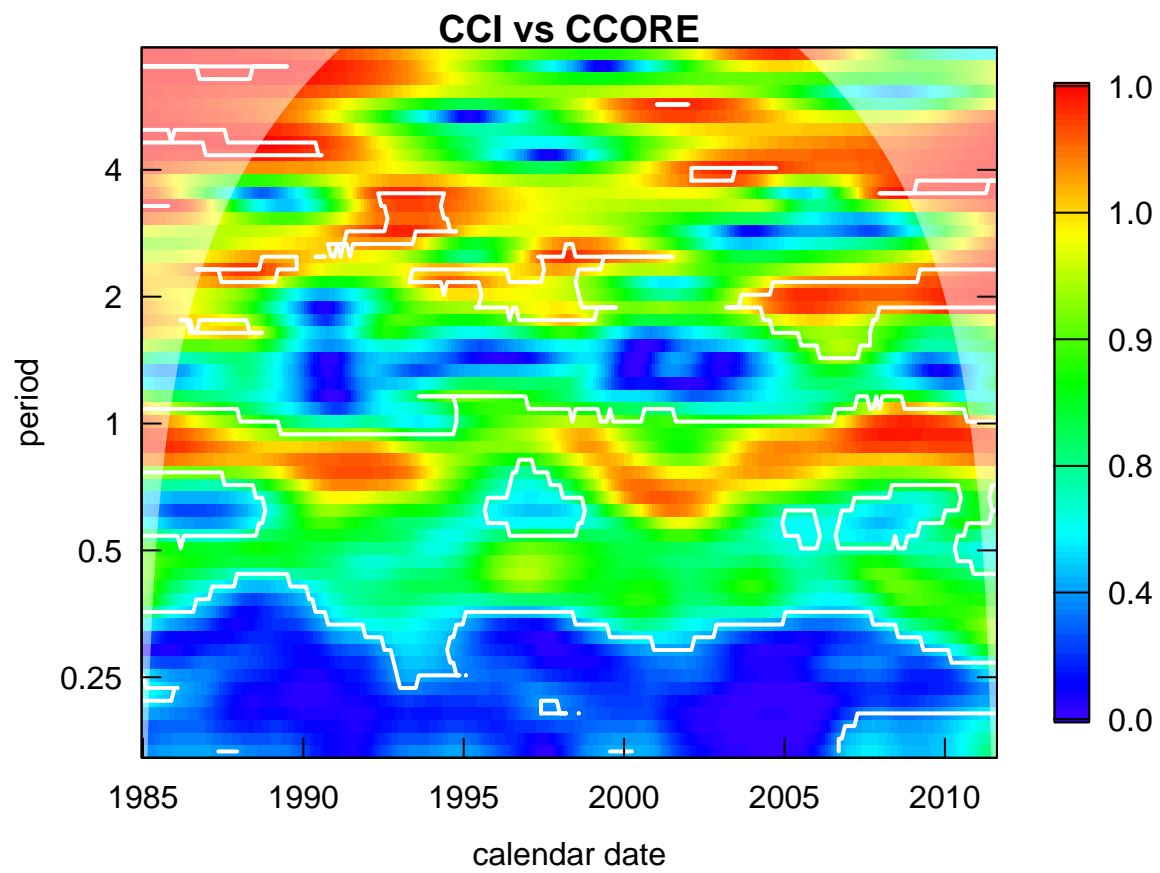


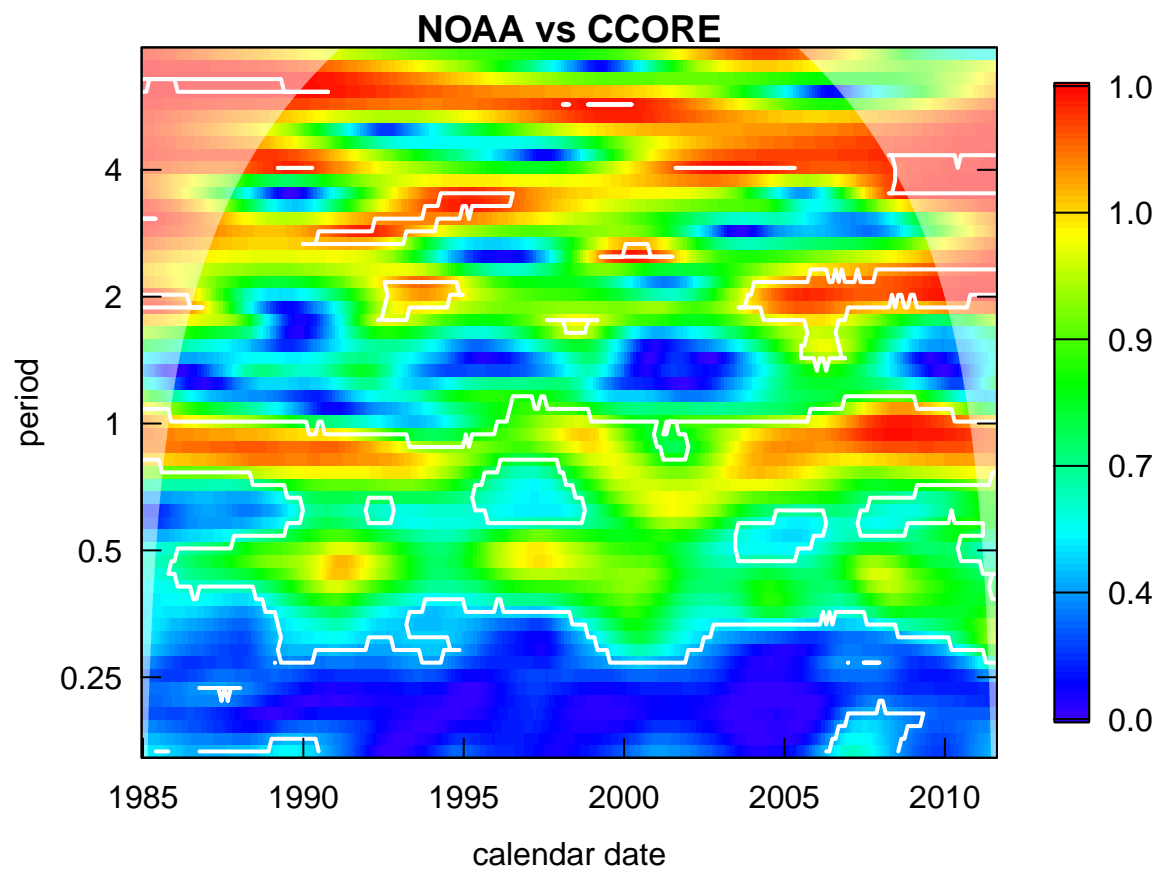








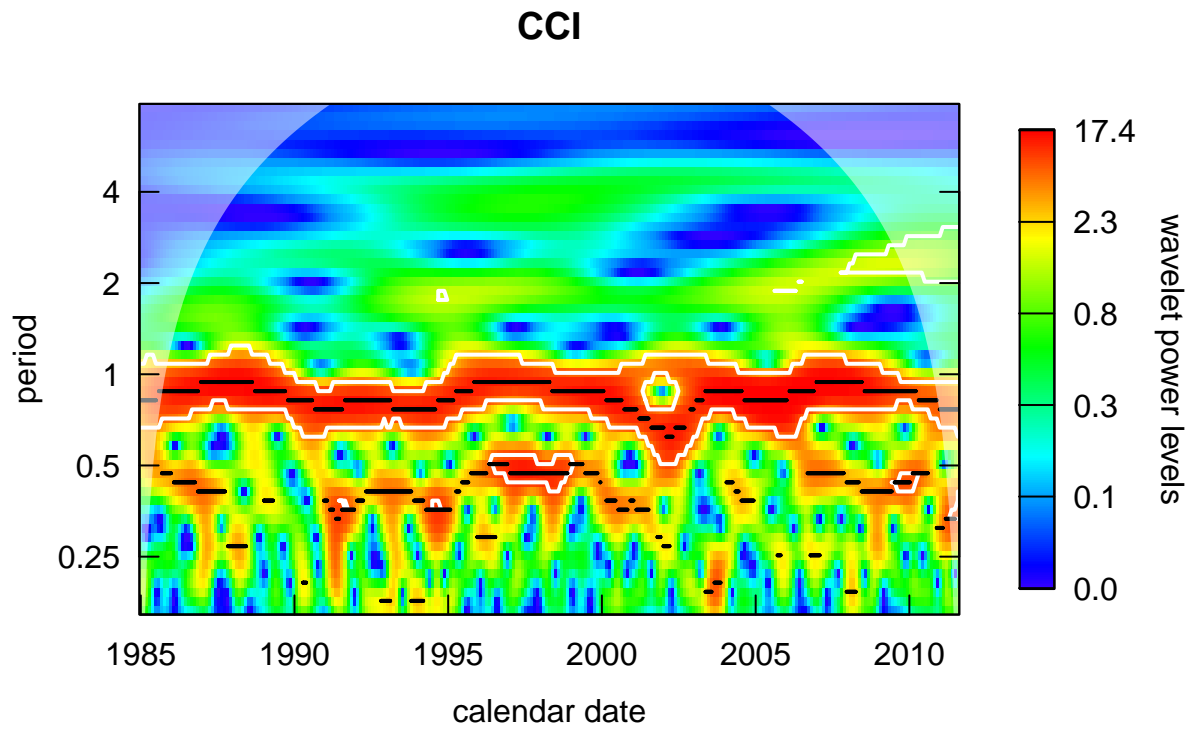


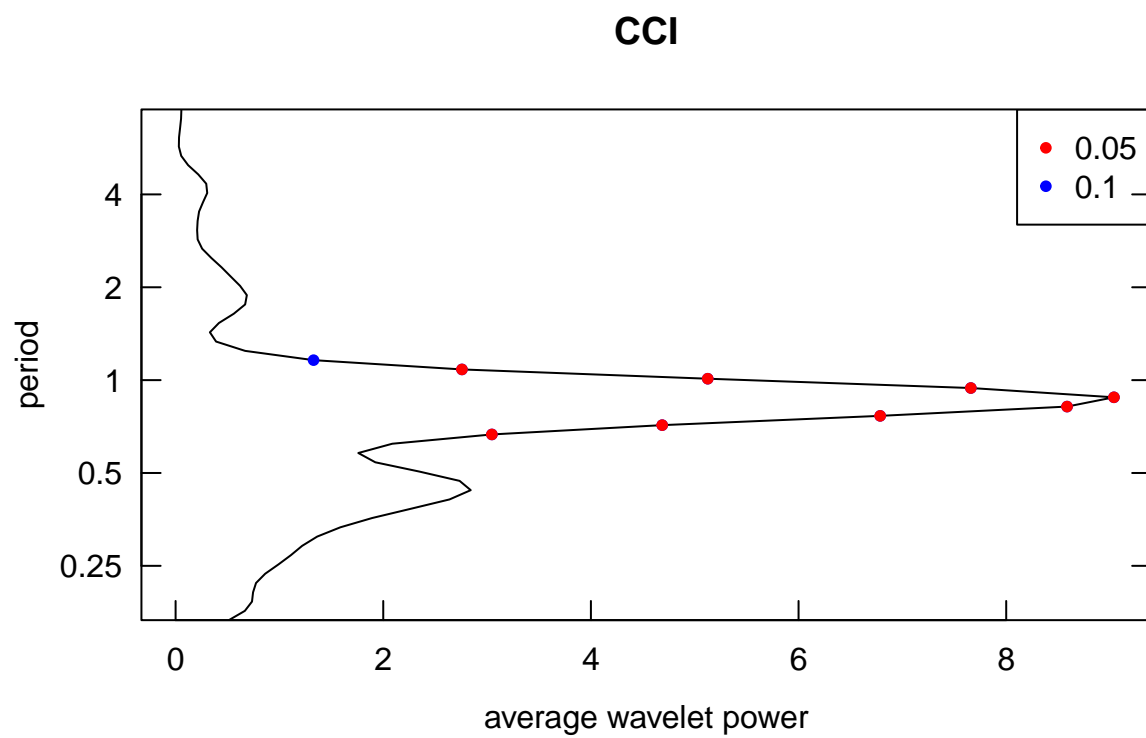


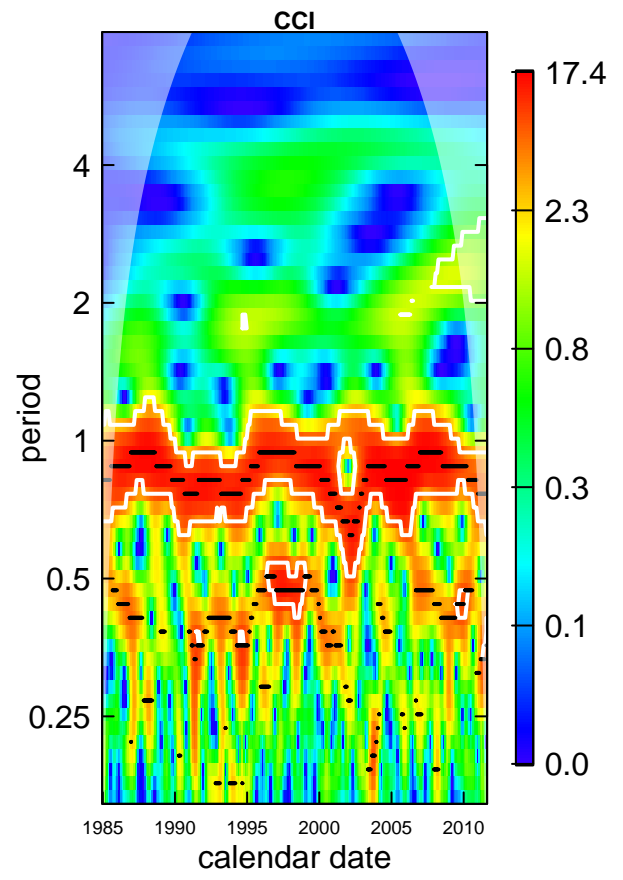
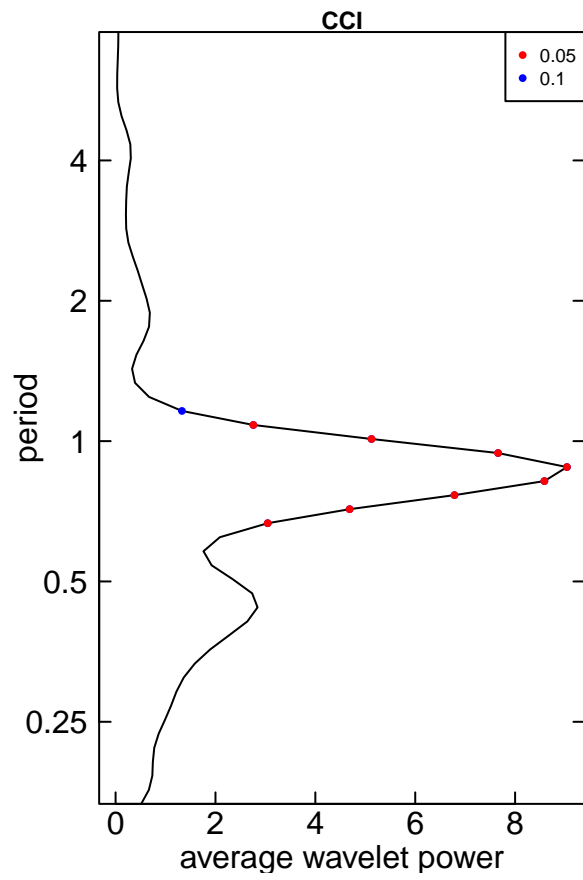
BRS07

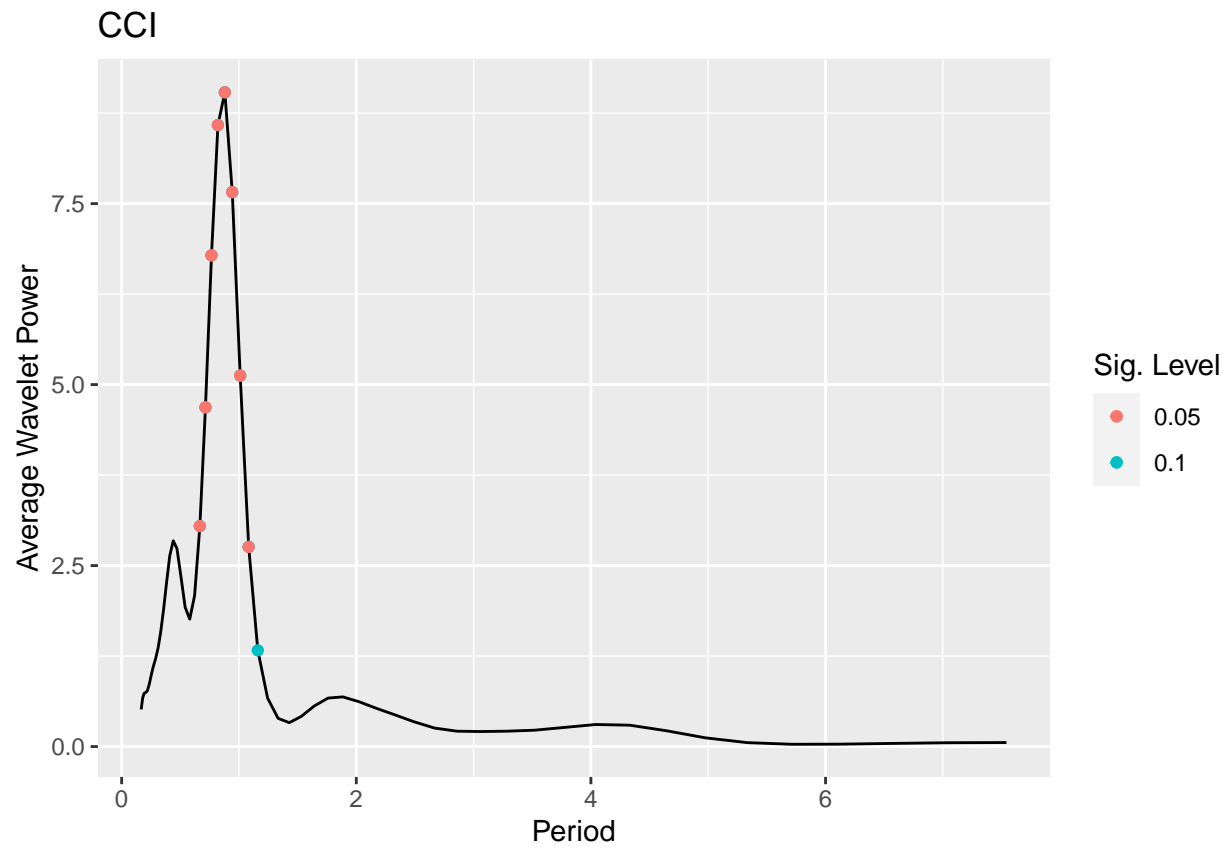
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```

|



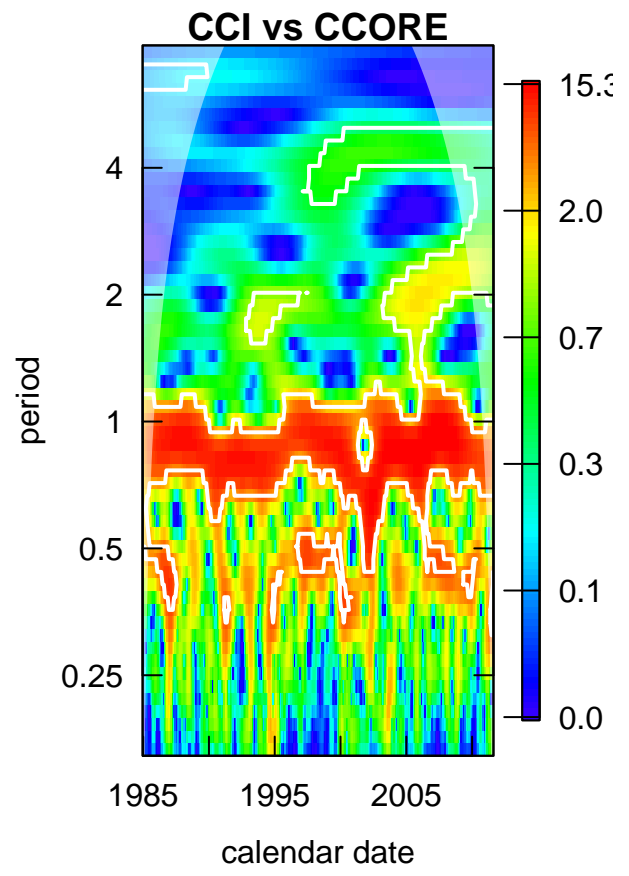
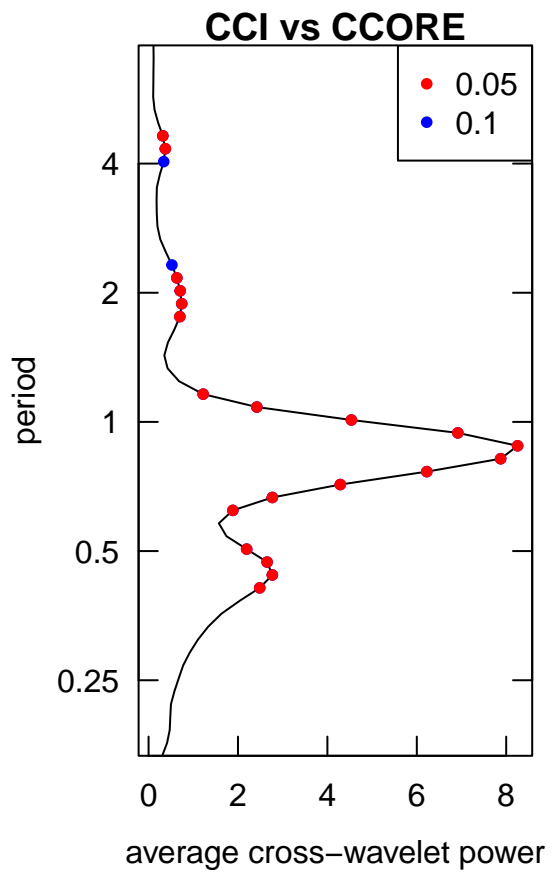


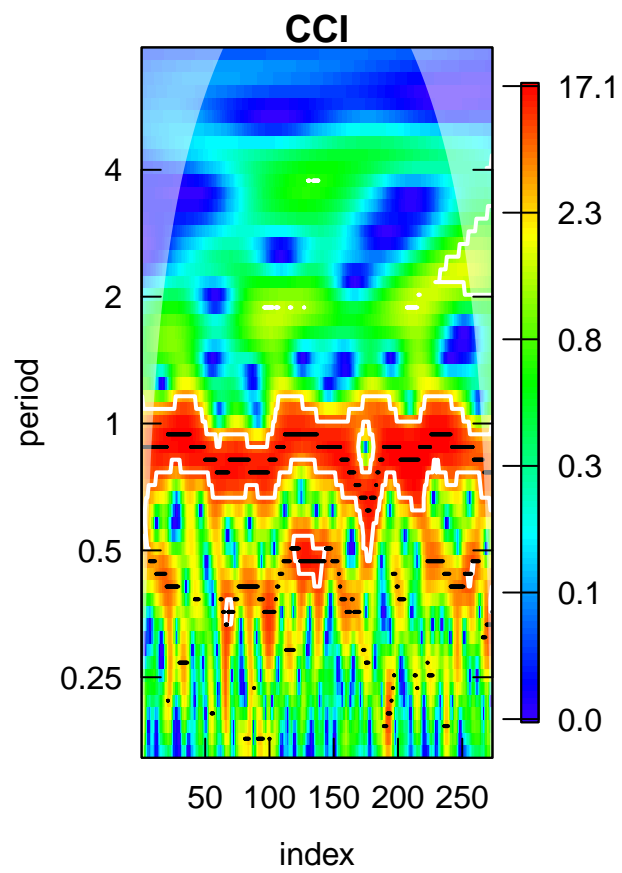


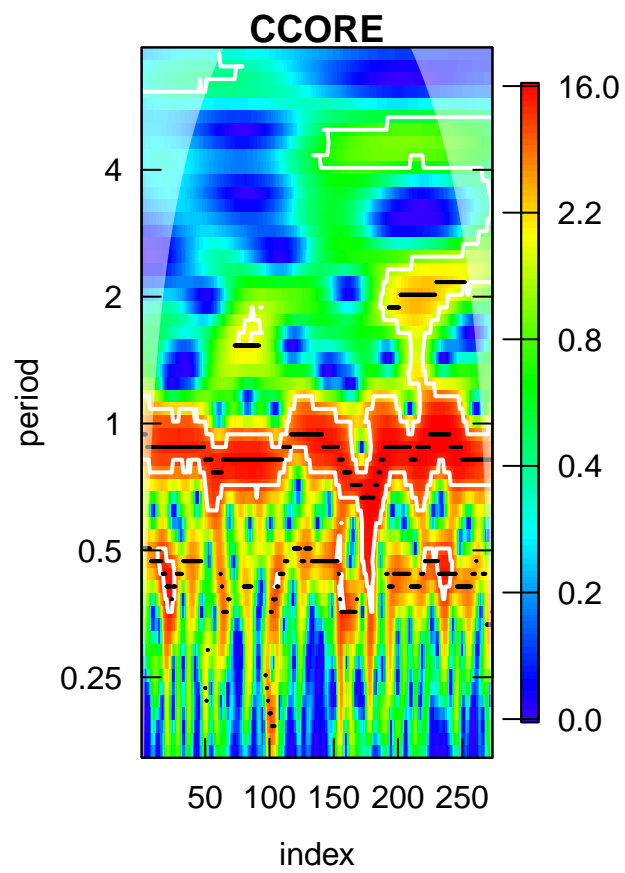


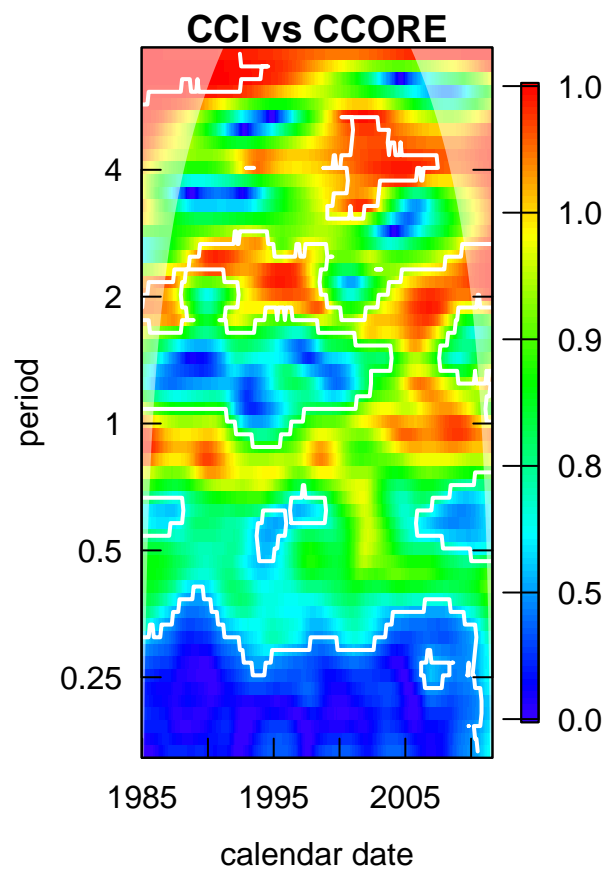
```
## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
```

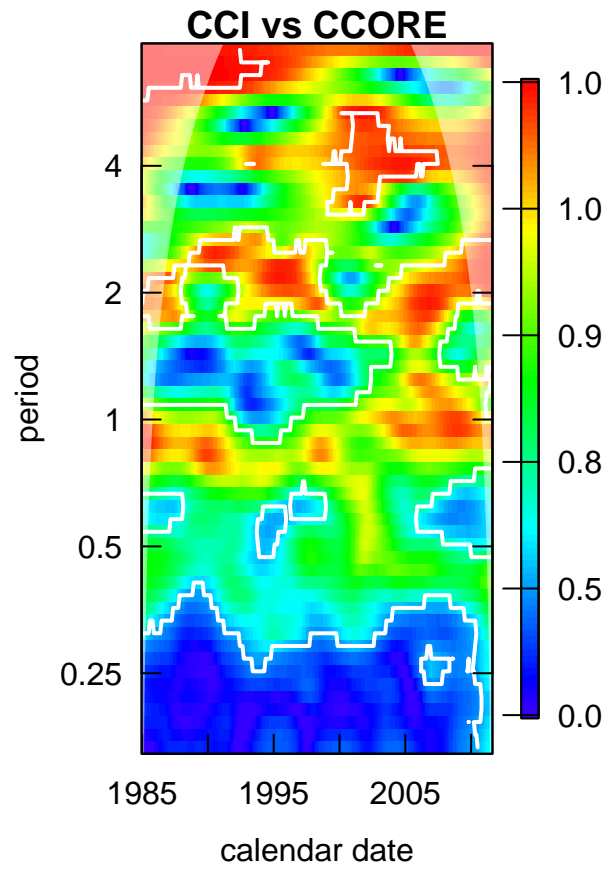
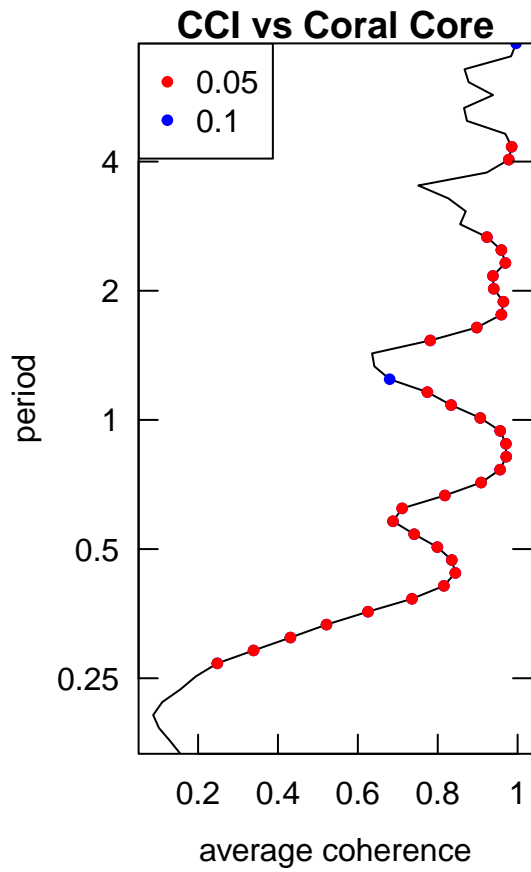
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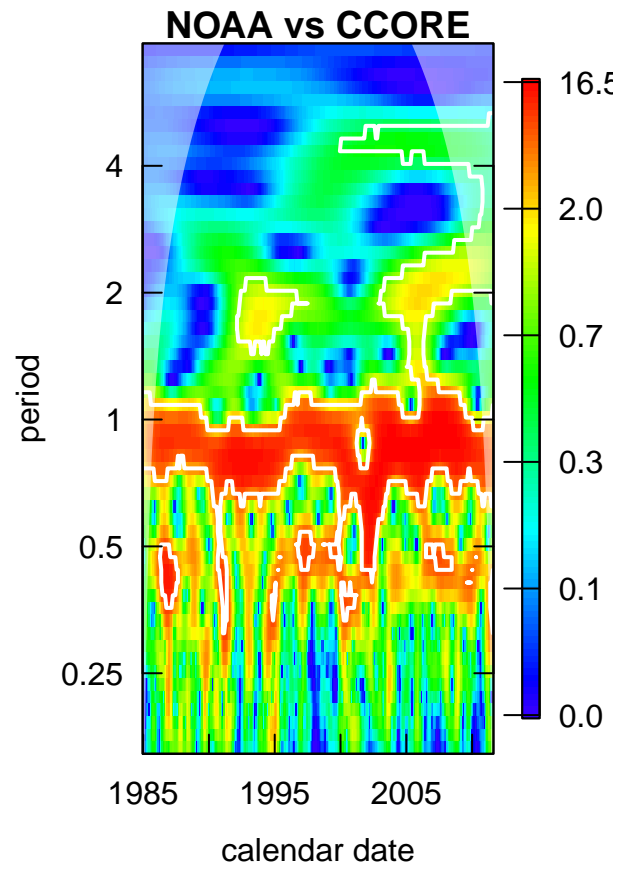
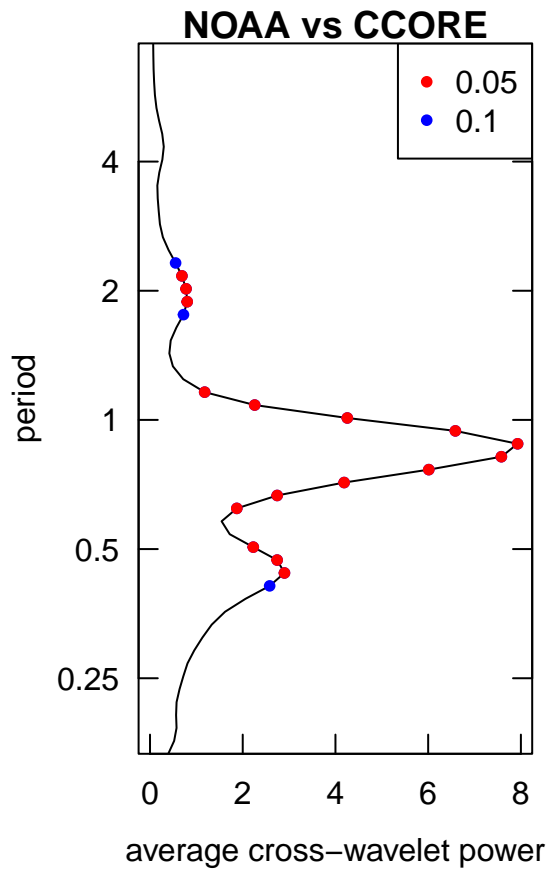


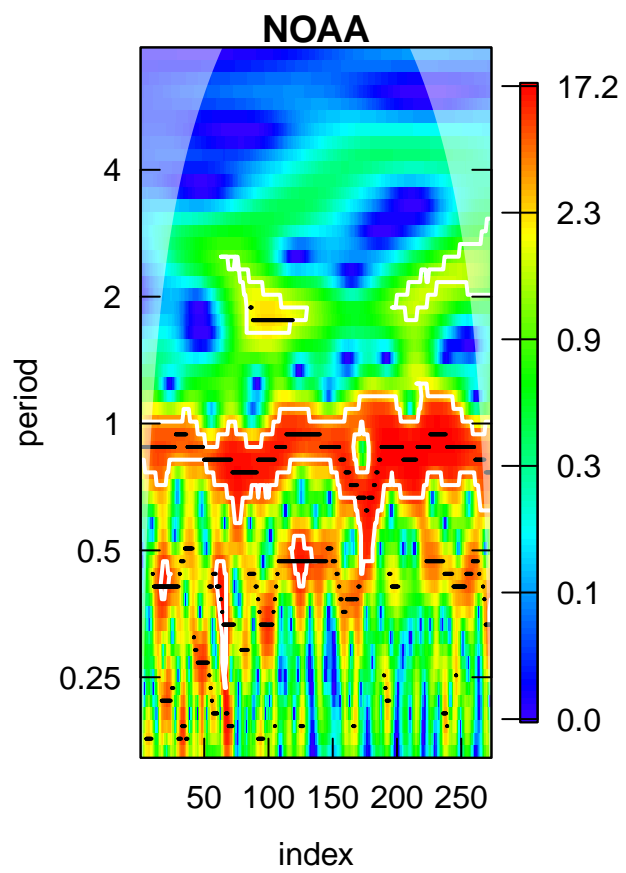


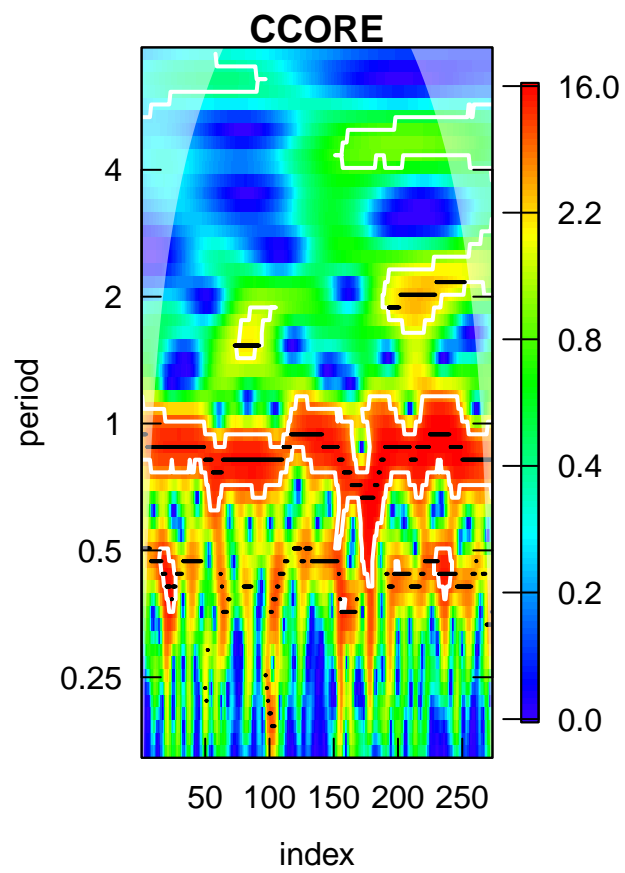


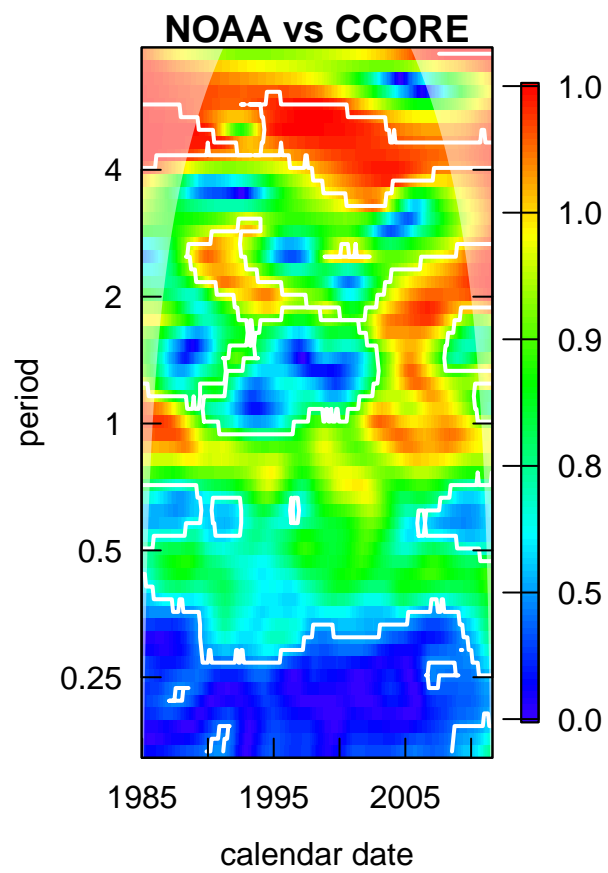
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

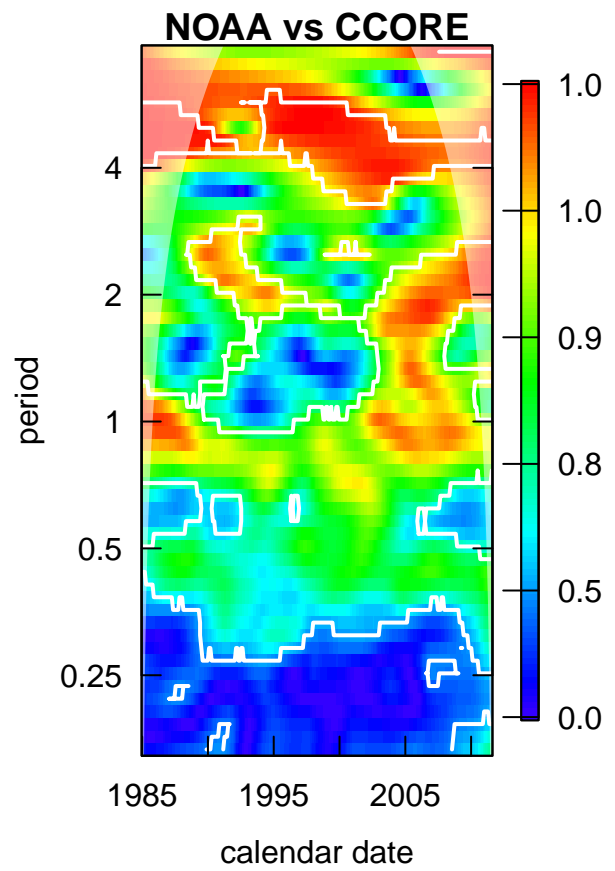
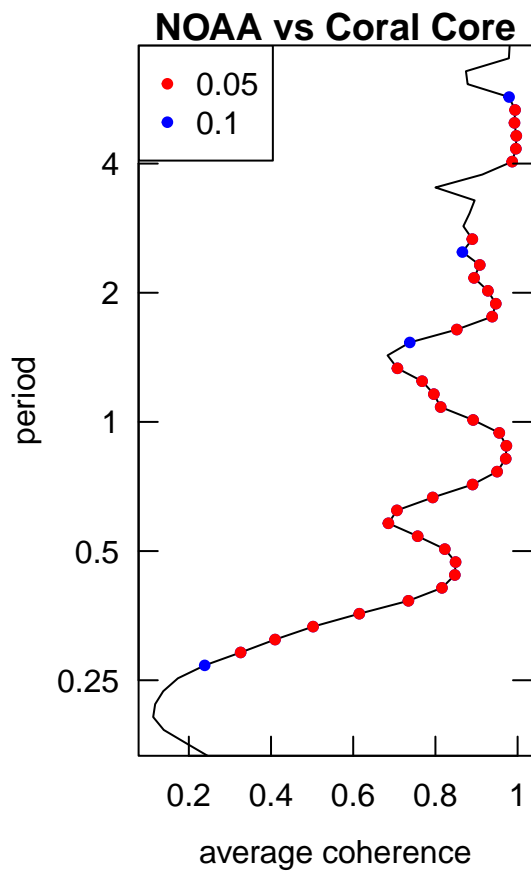
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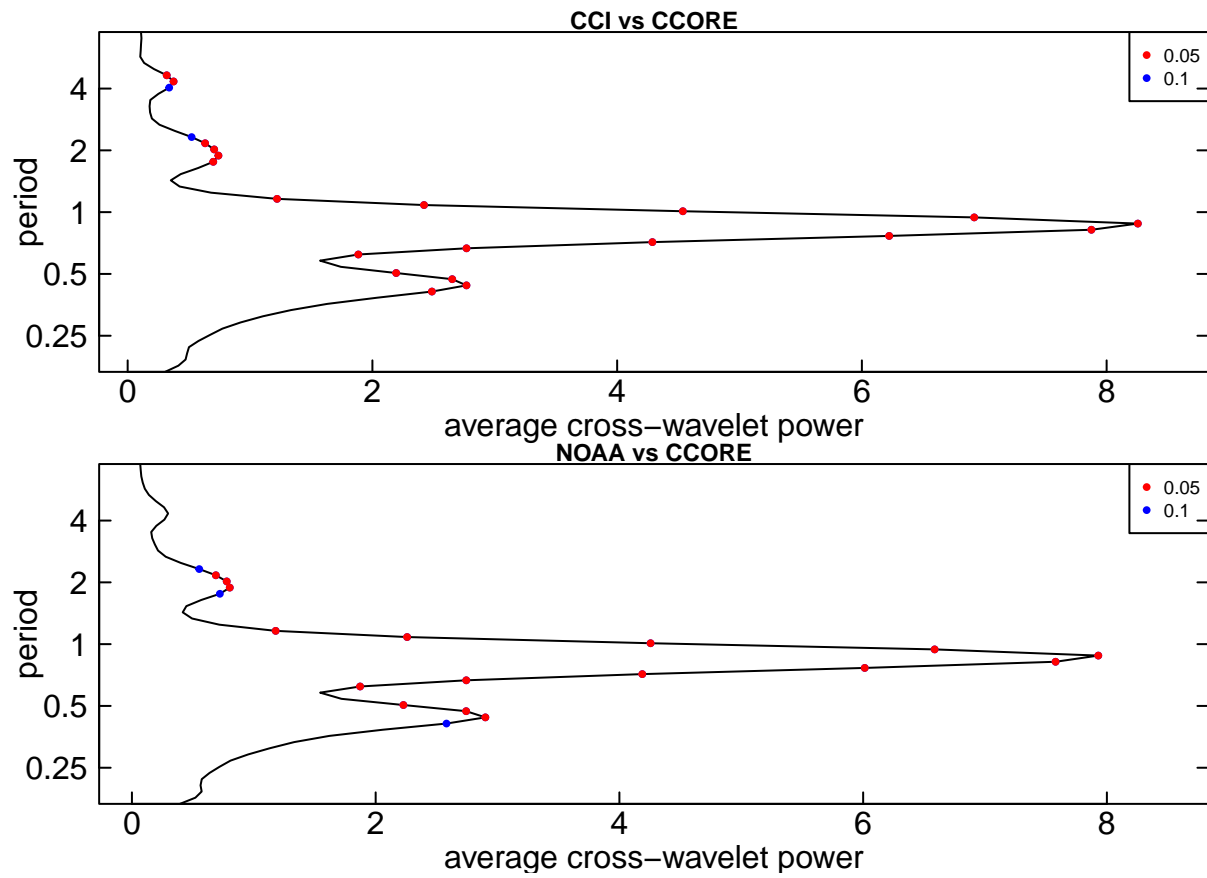


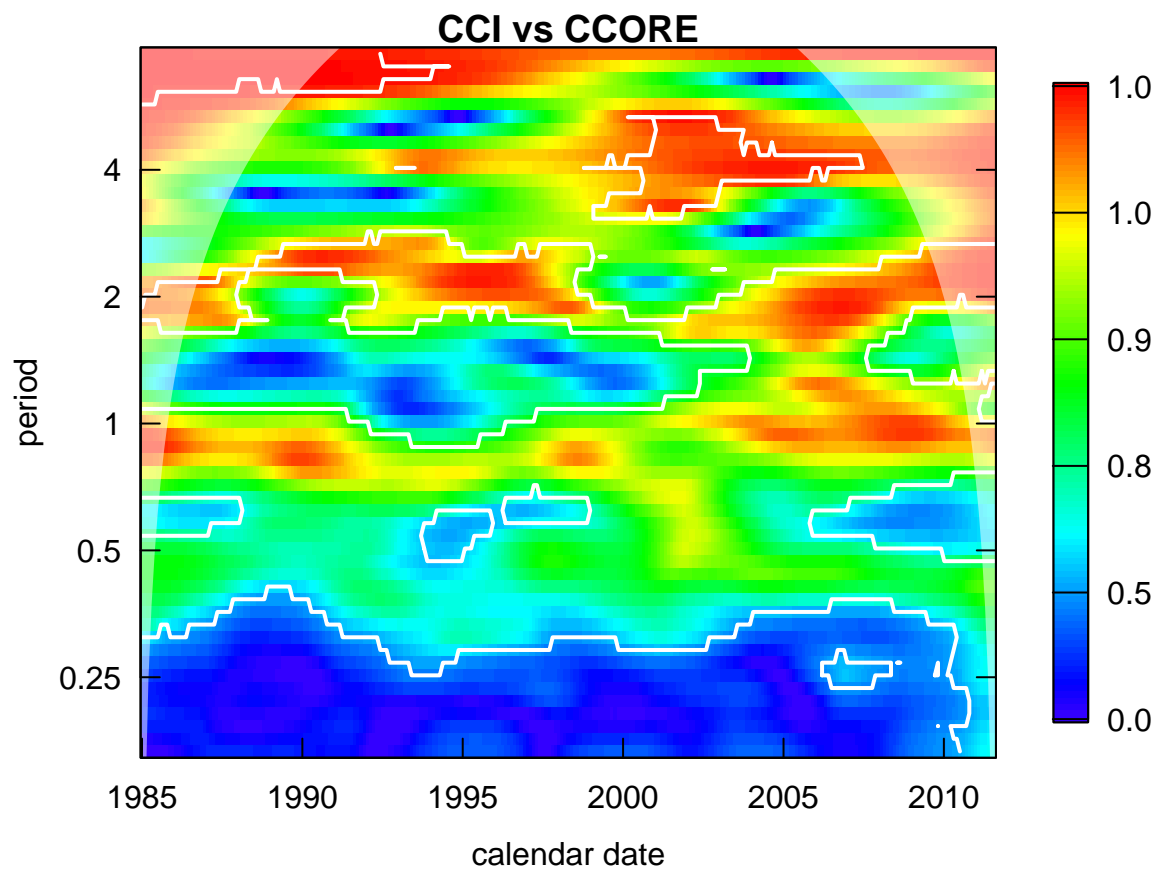


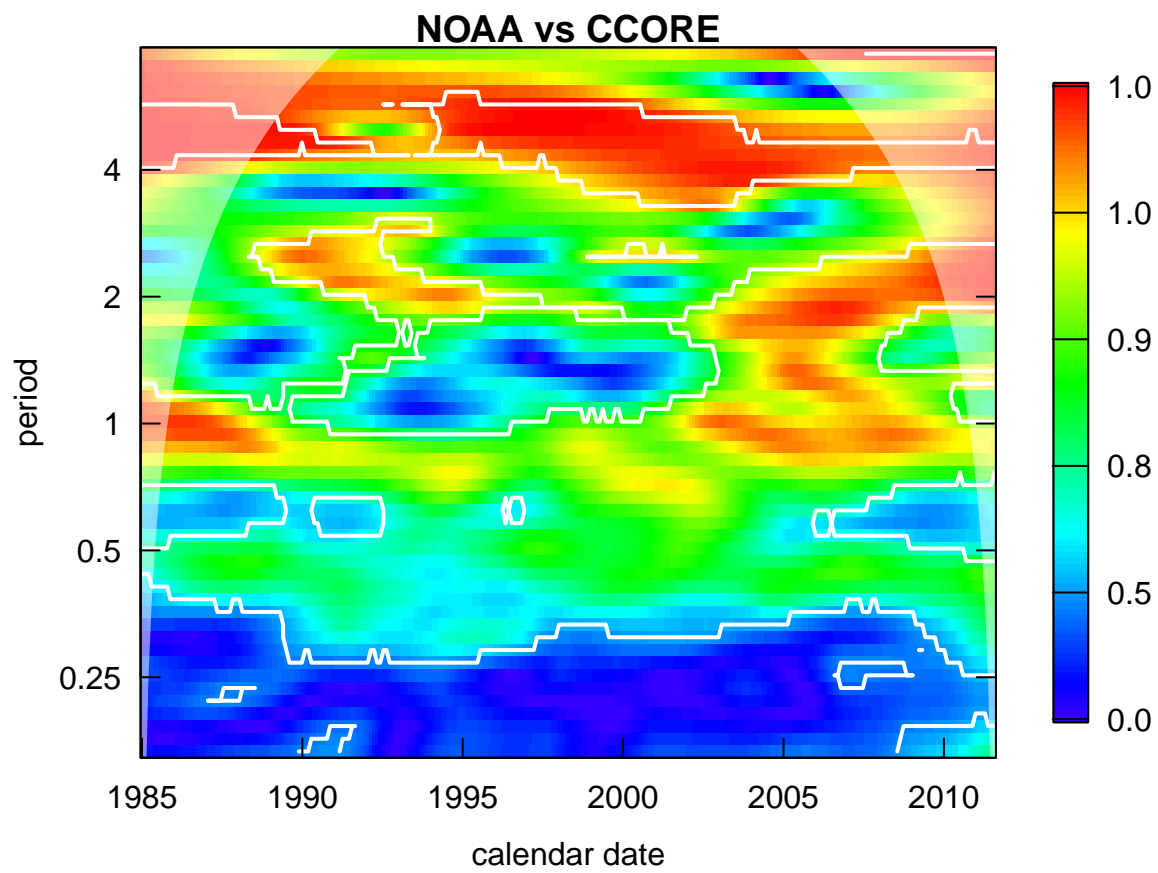








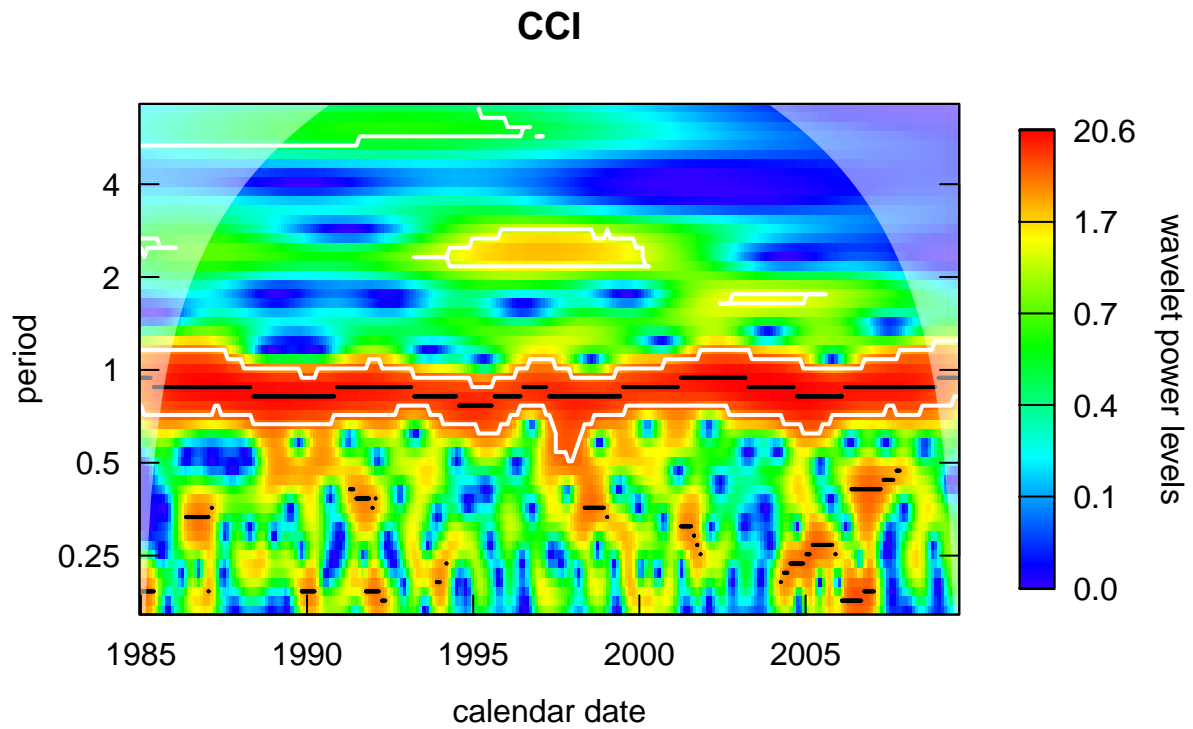


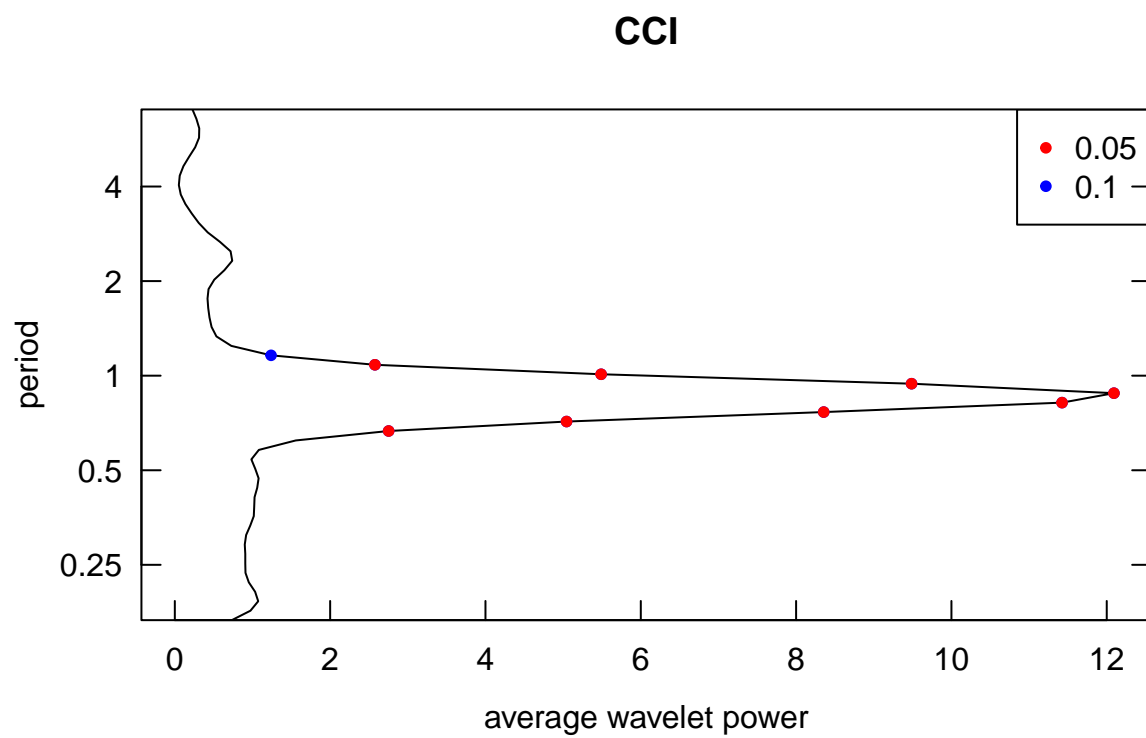


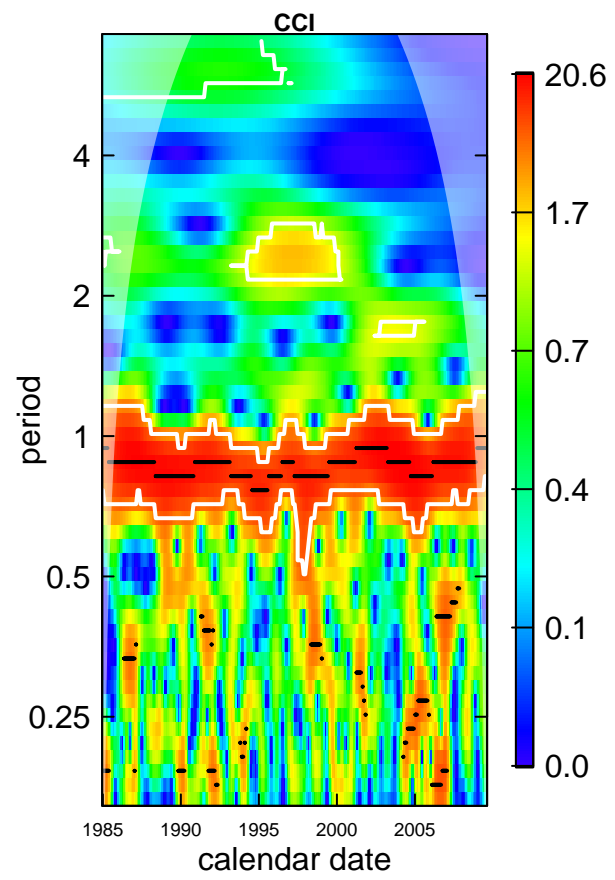
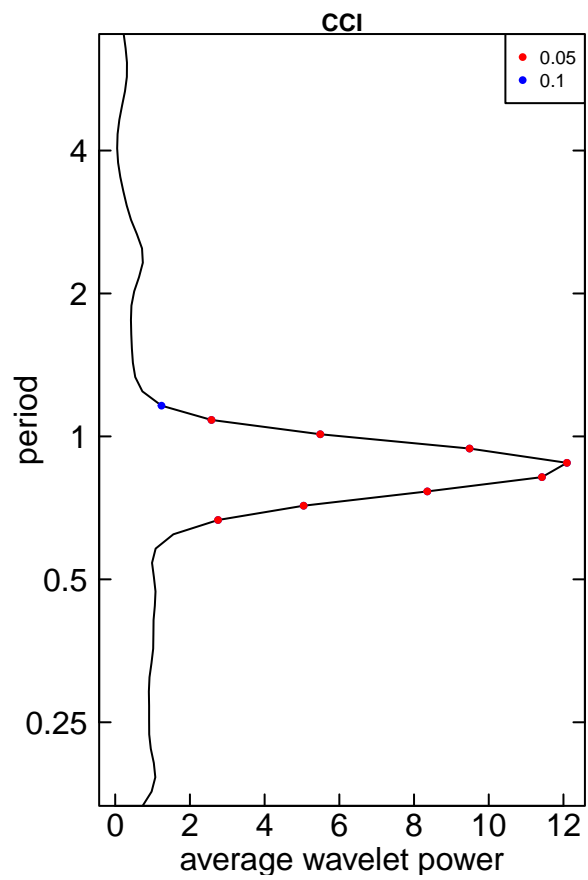
DAR3

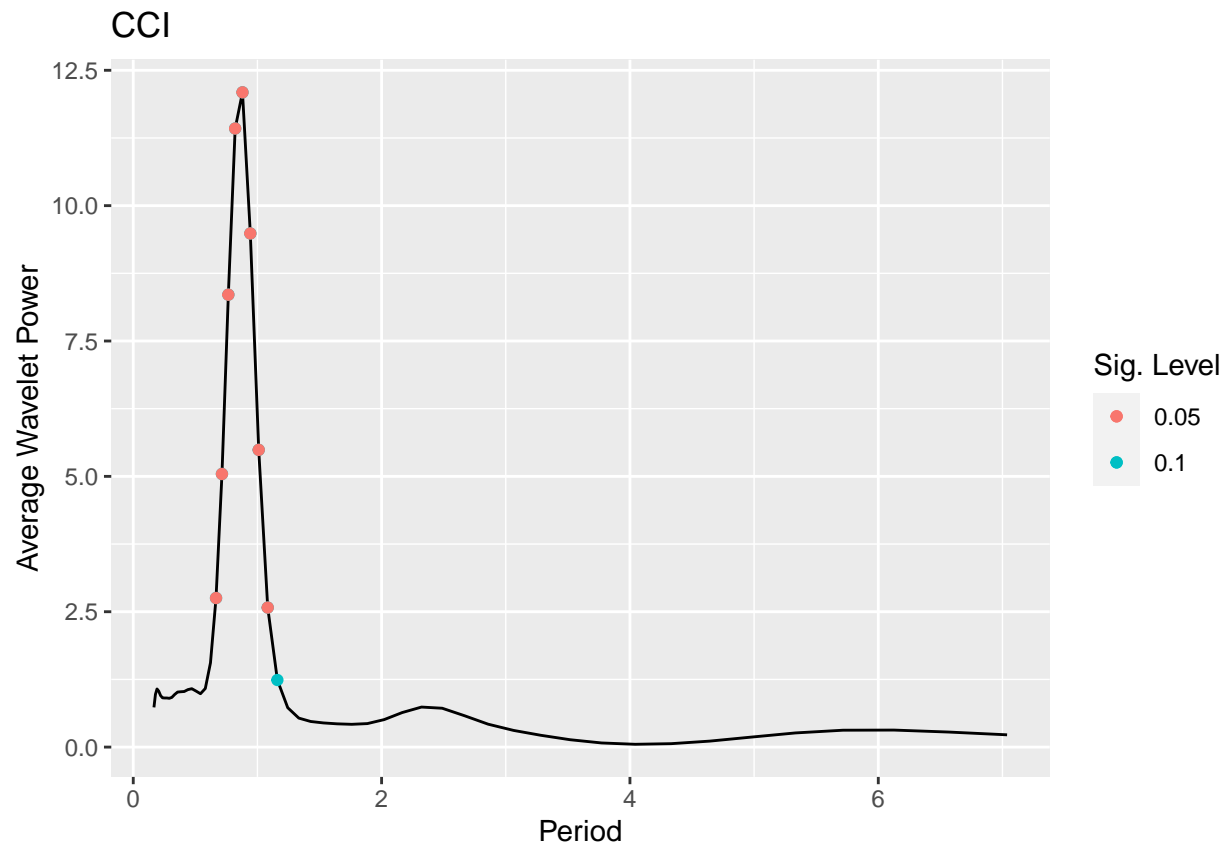
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```

|



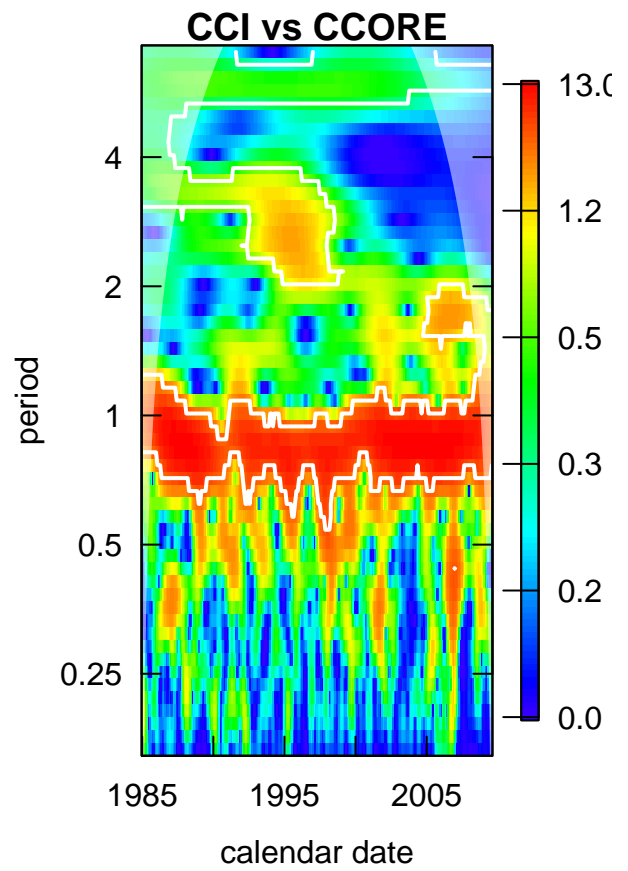
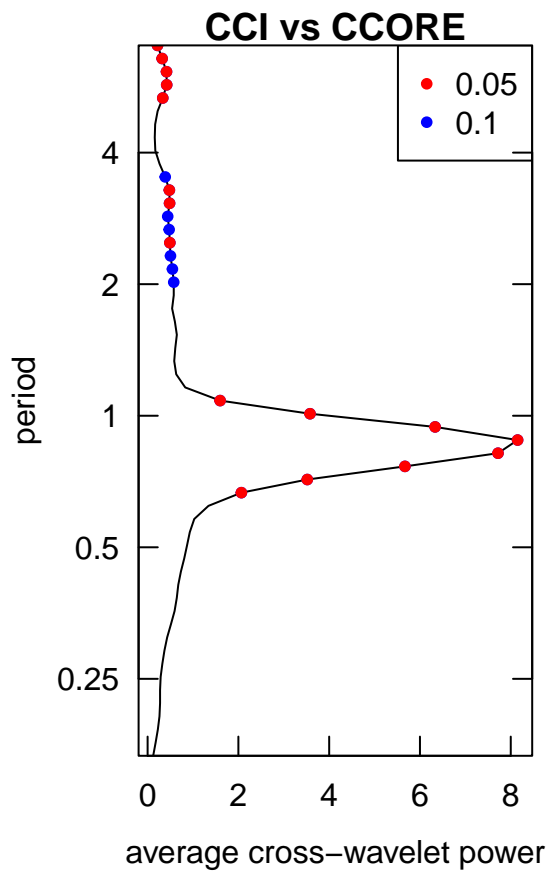


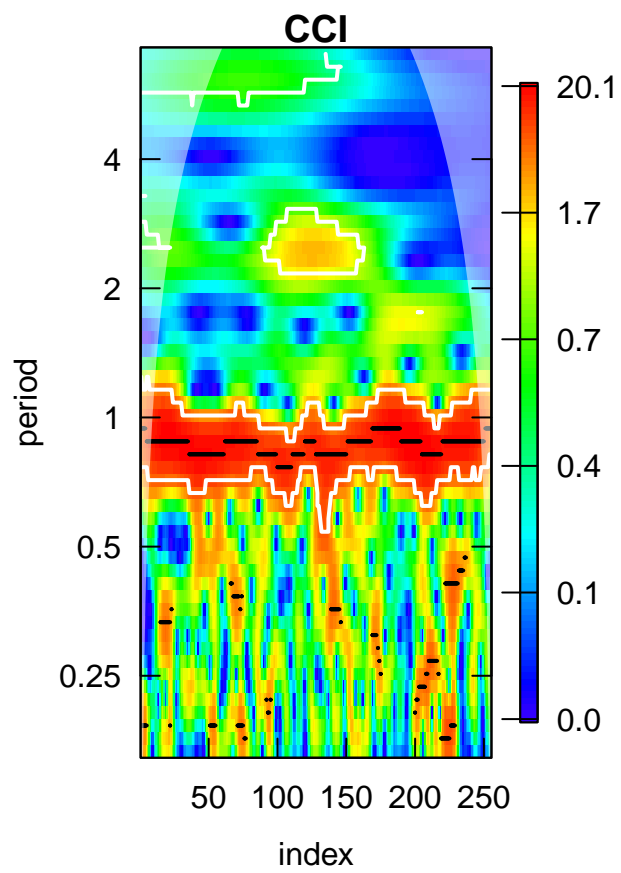


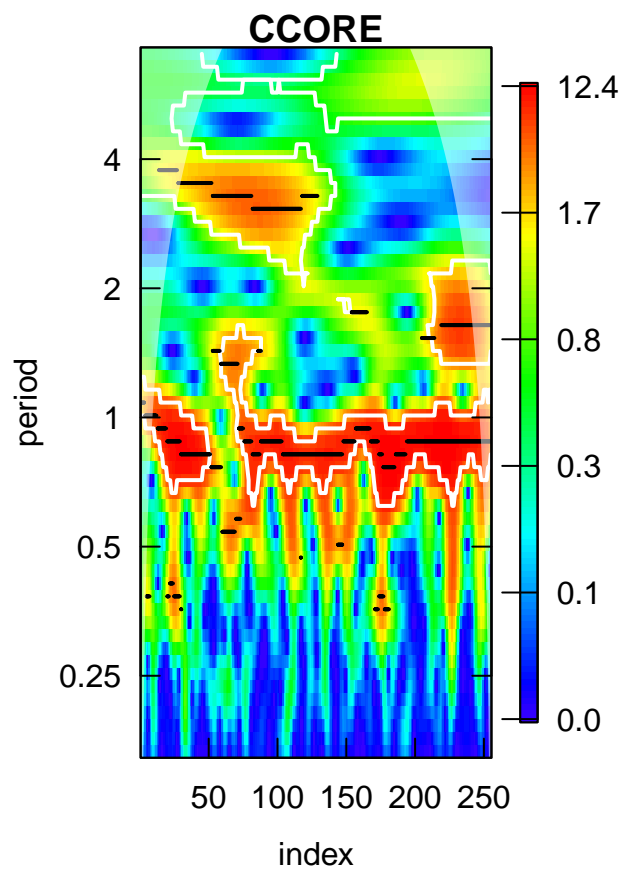


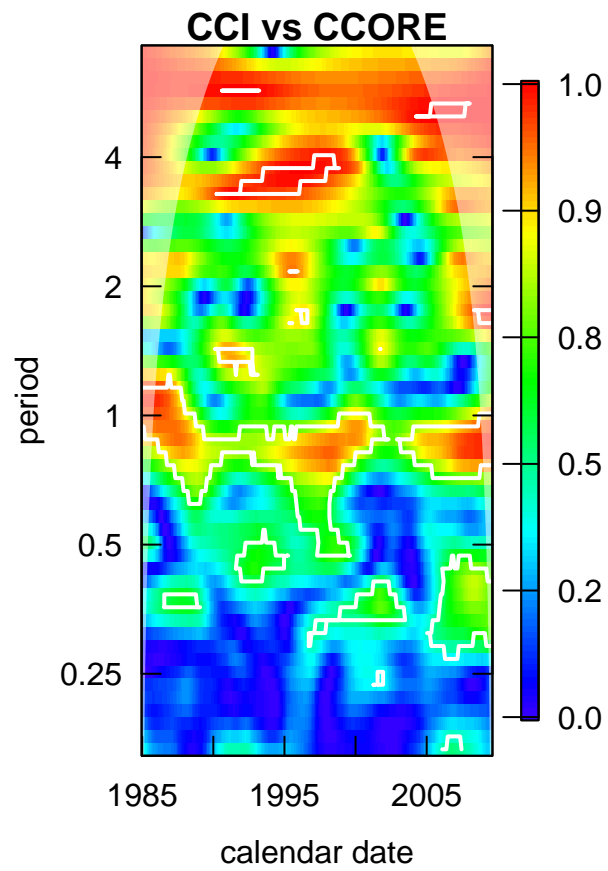
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

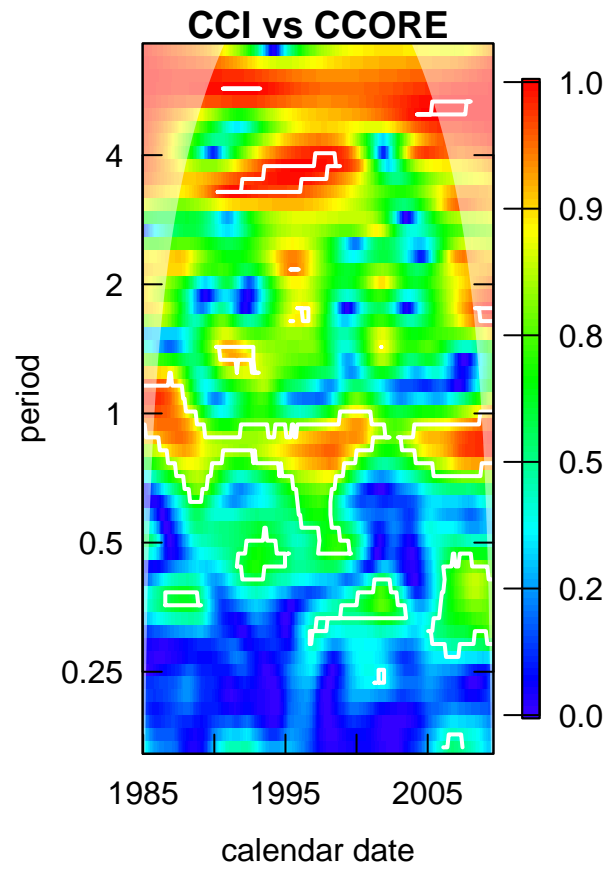
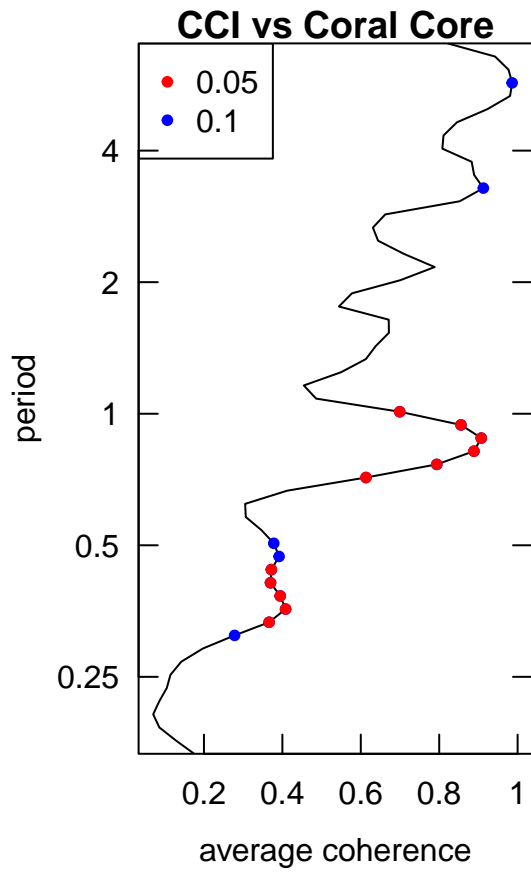
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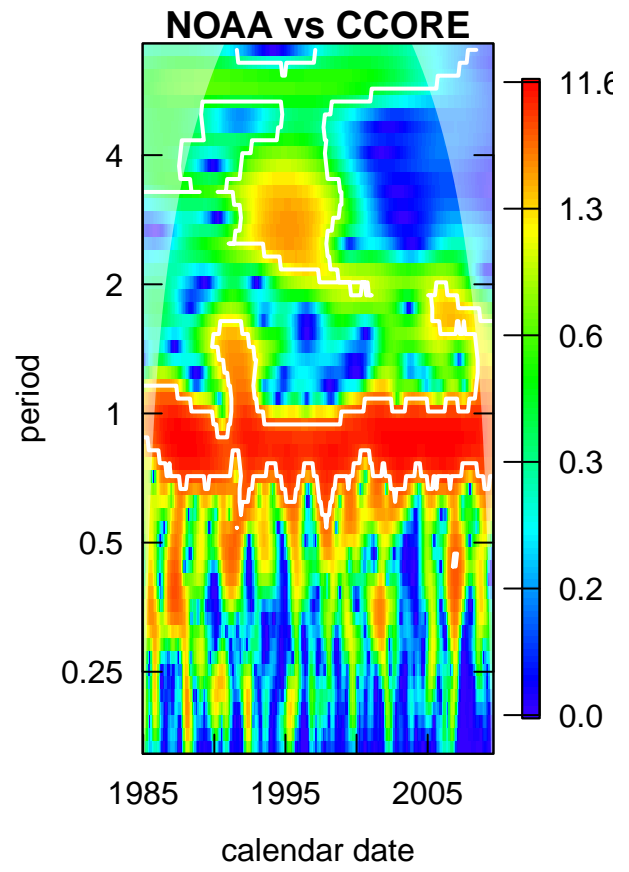
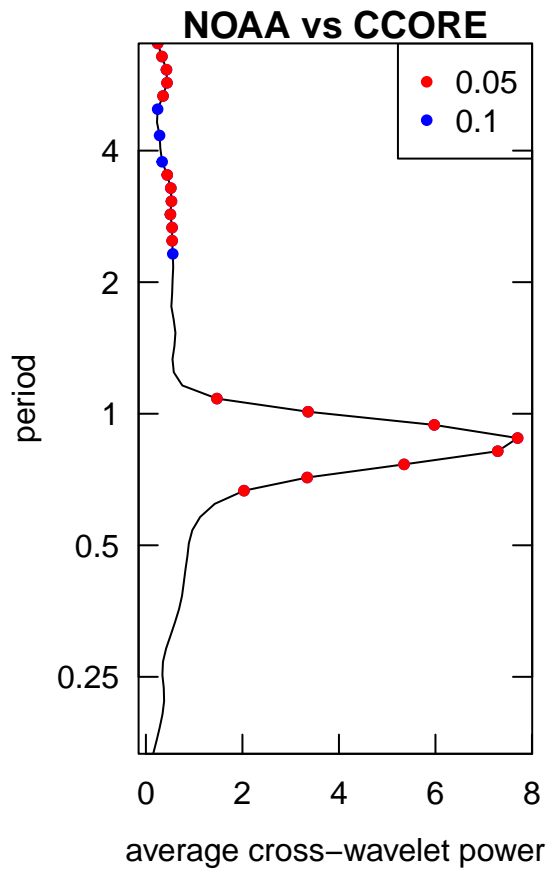


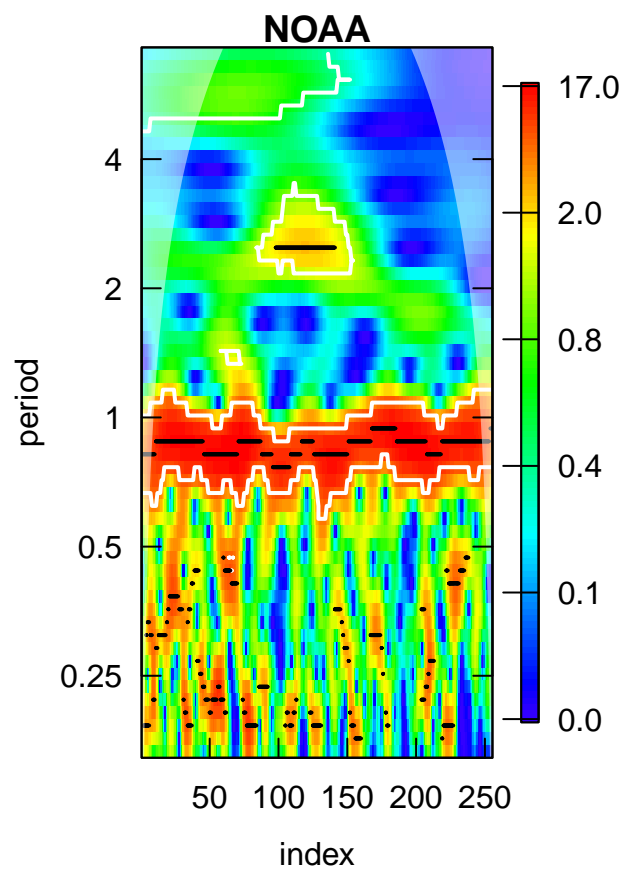


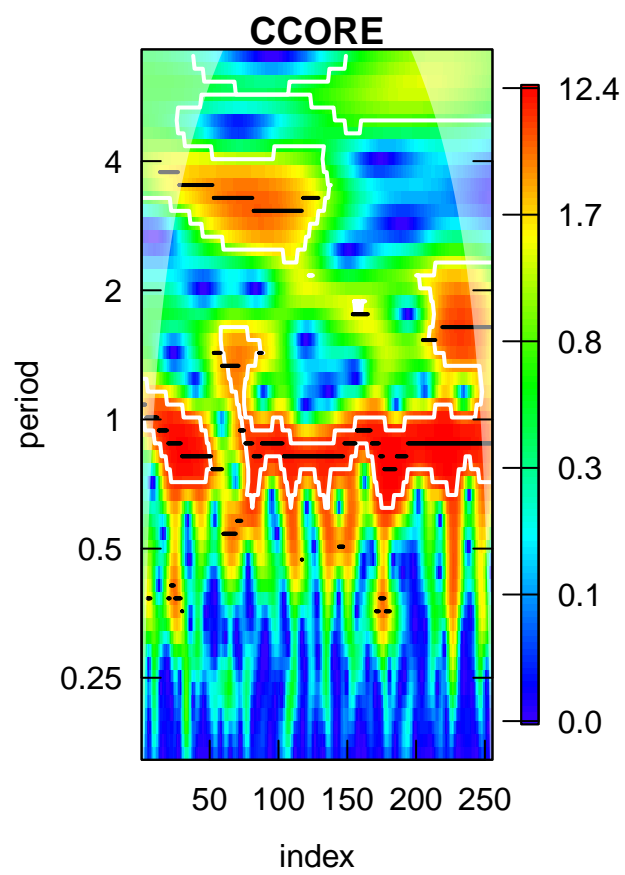


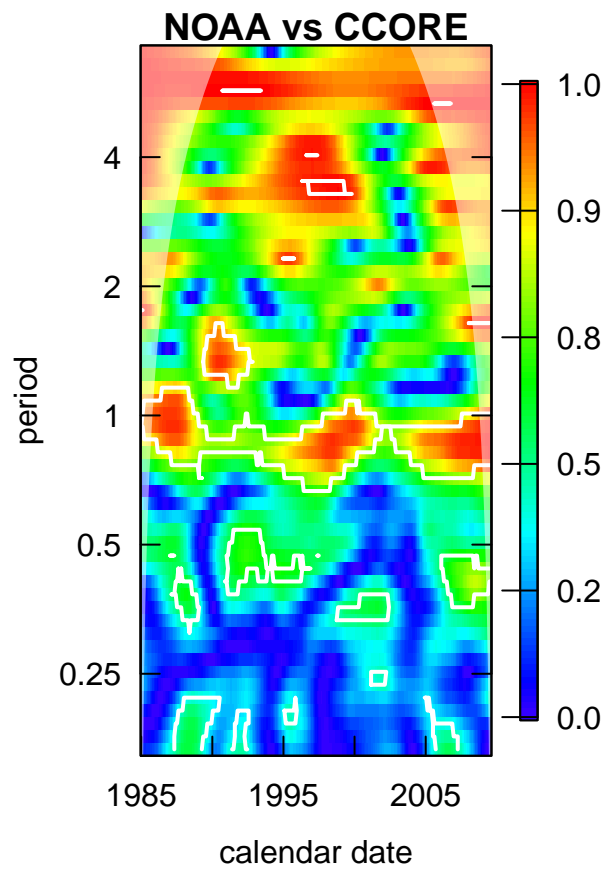
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

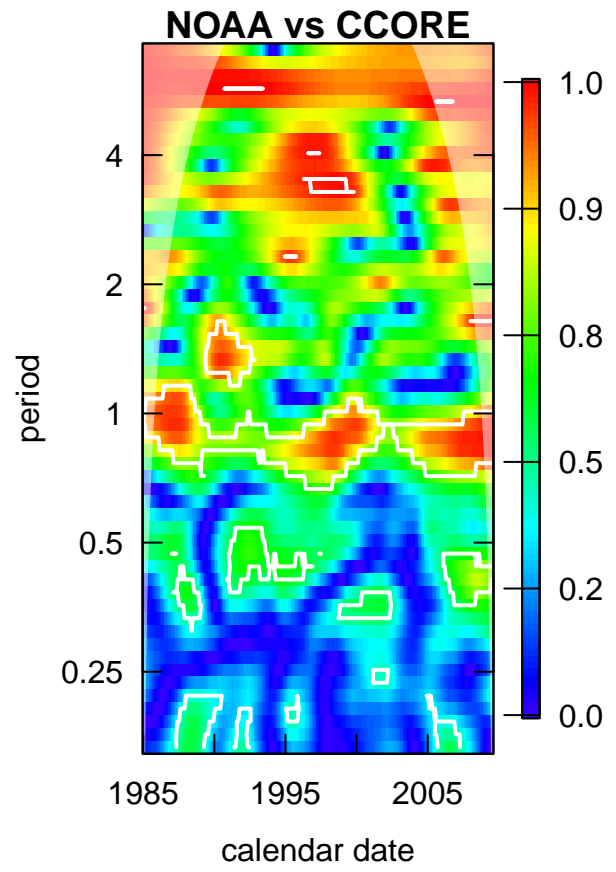
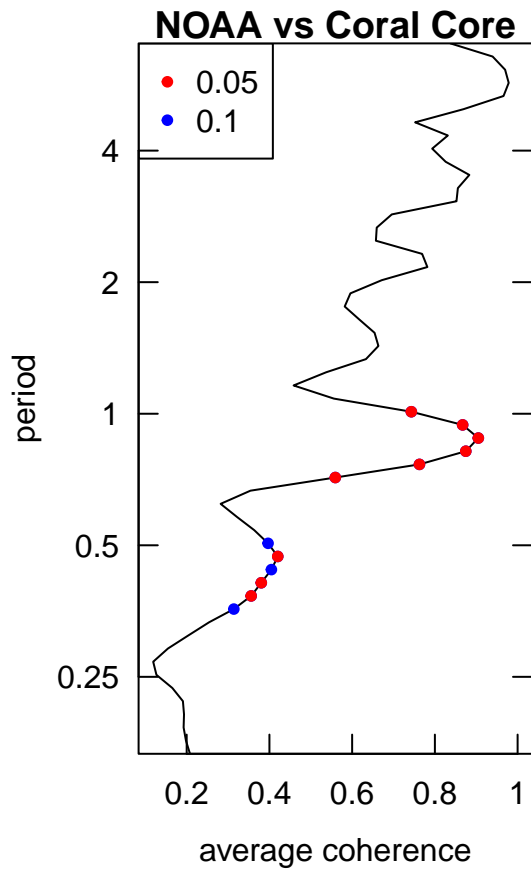
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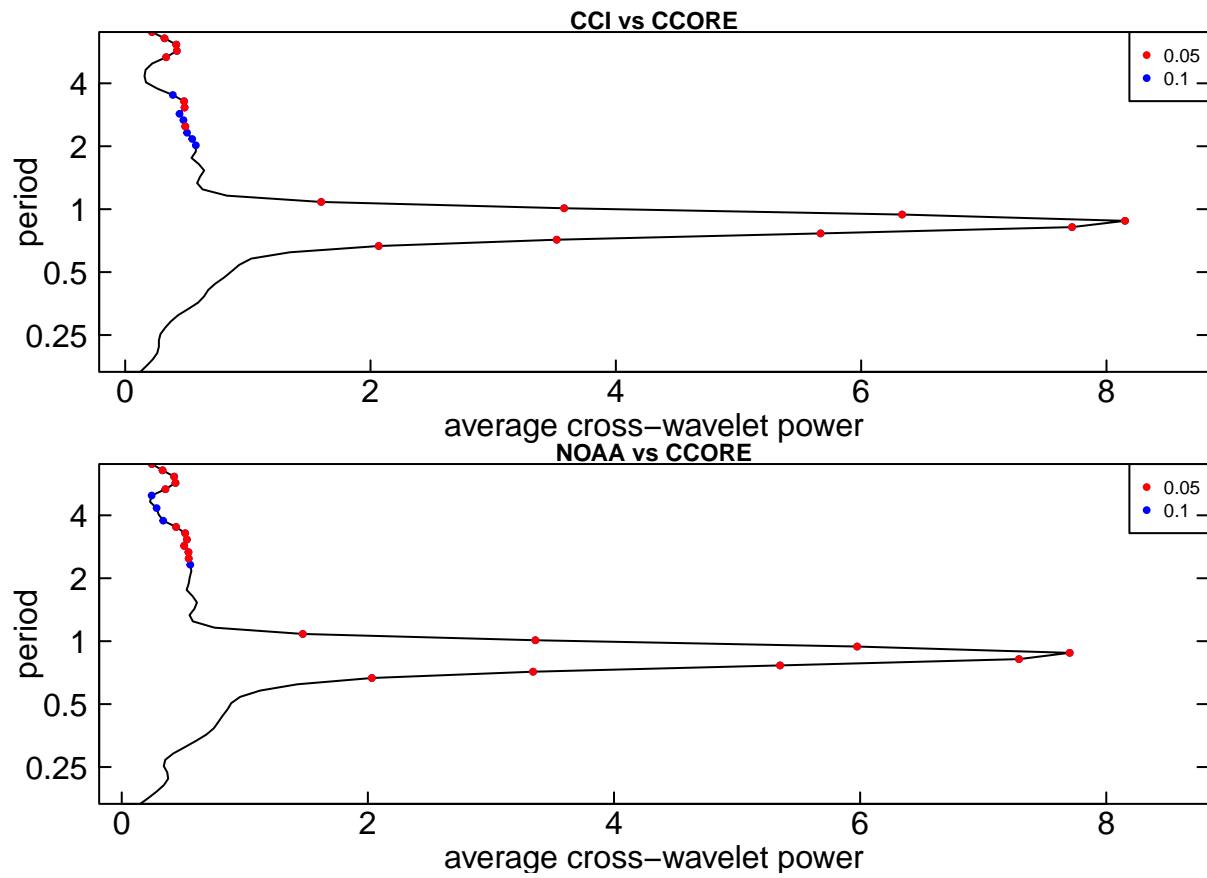


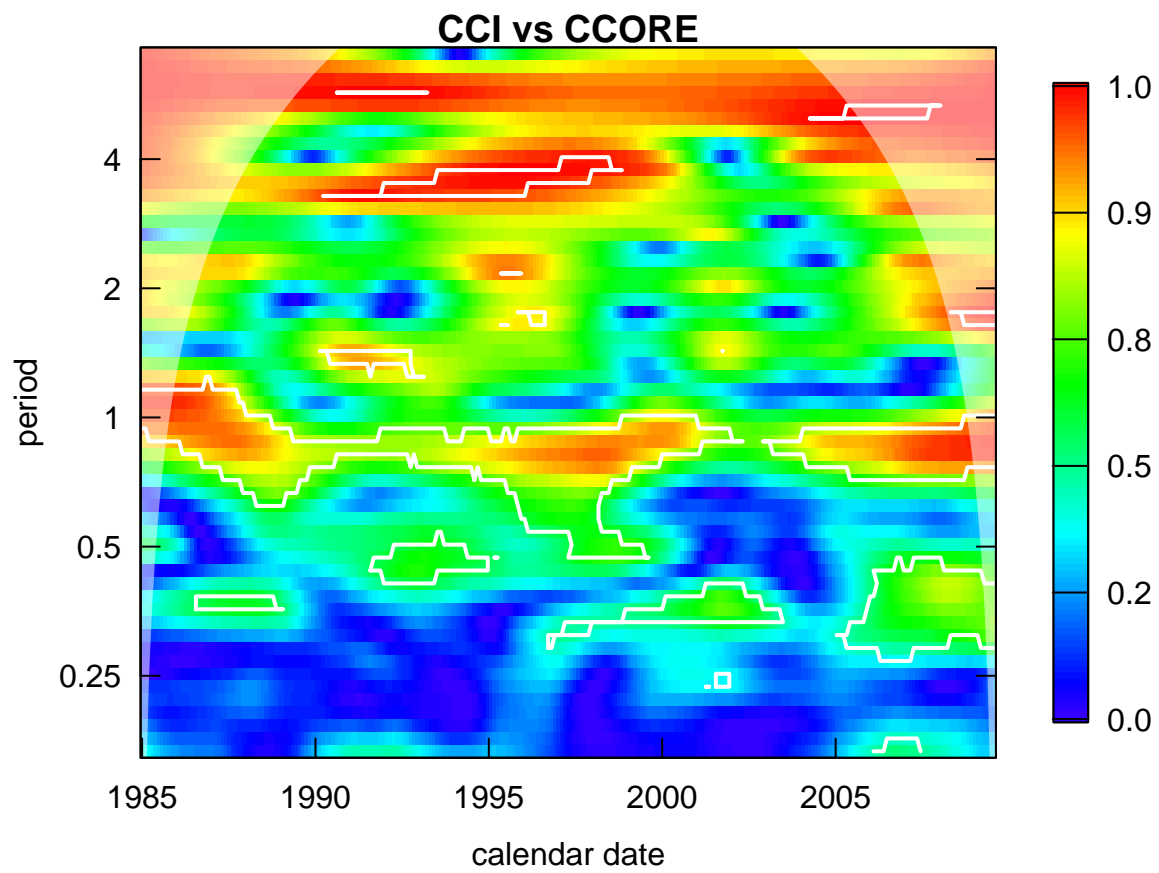


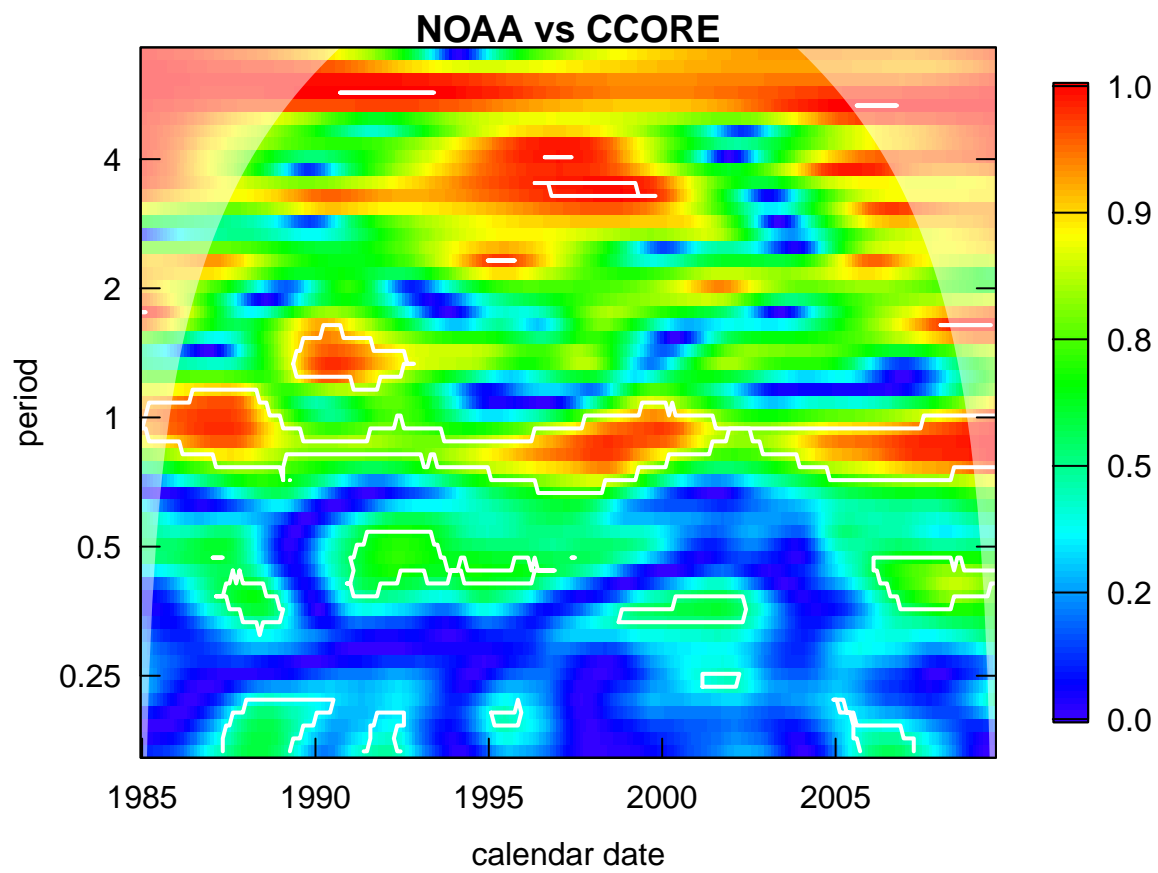








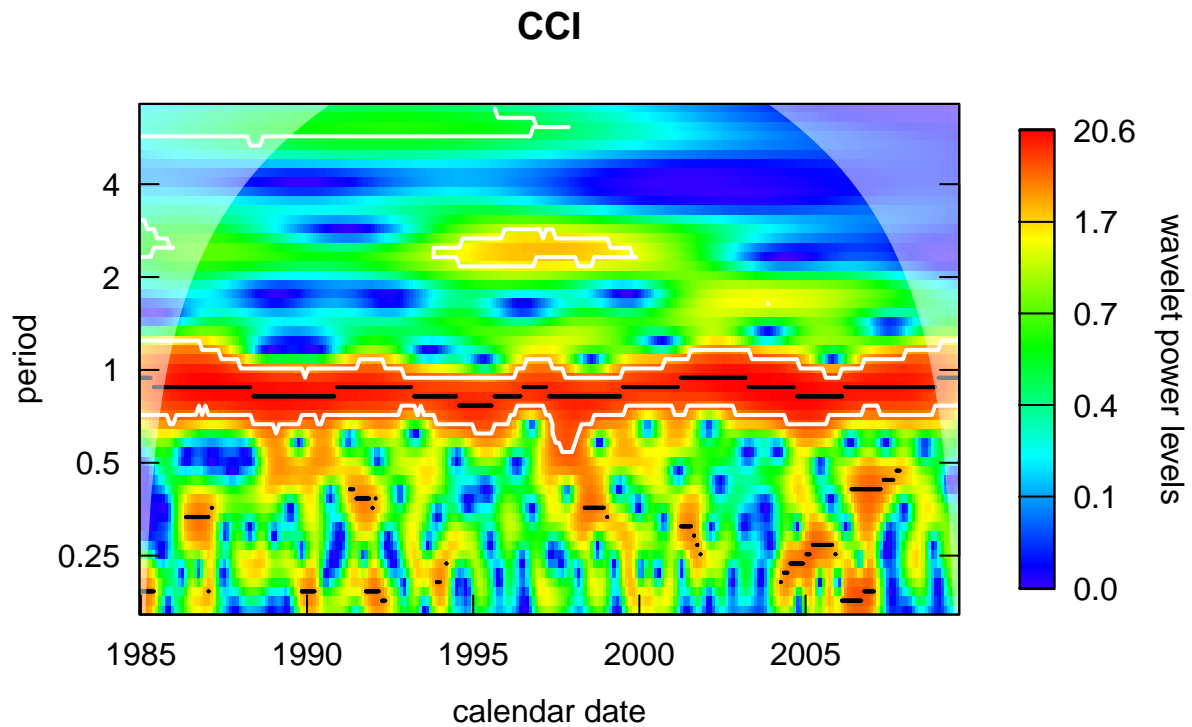


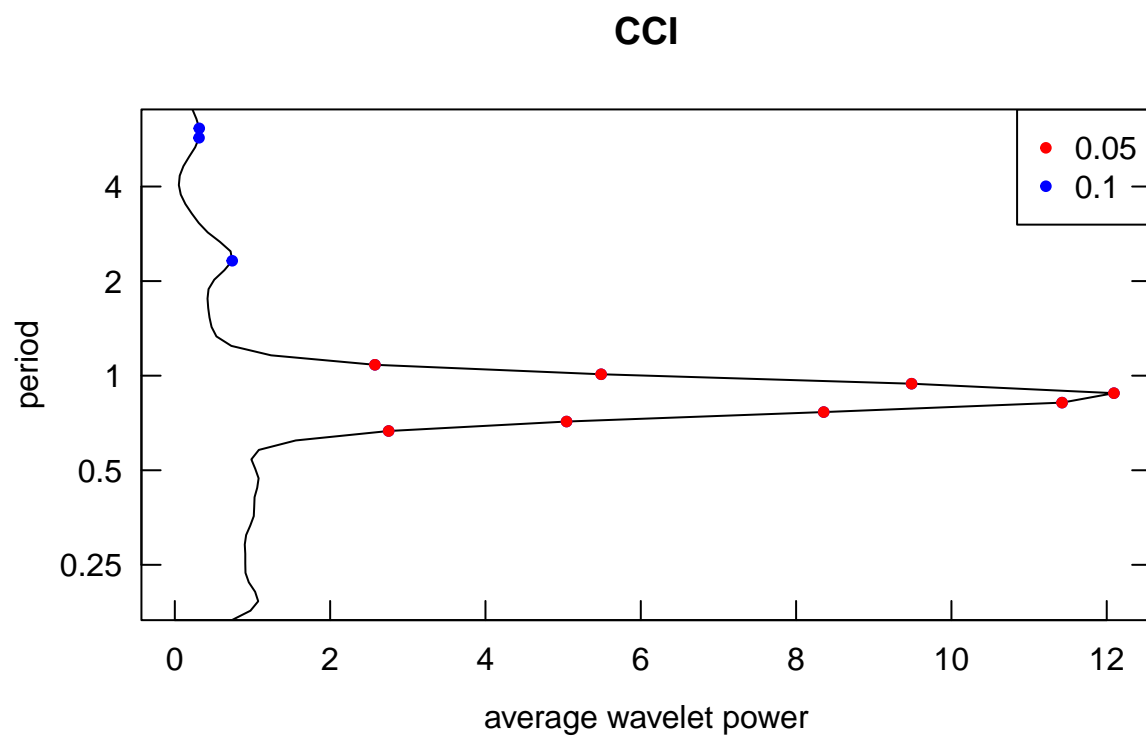


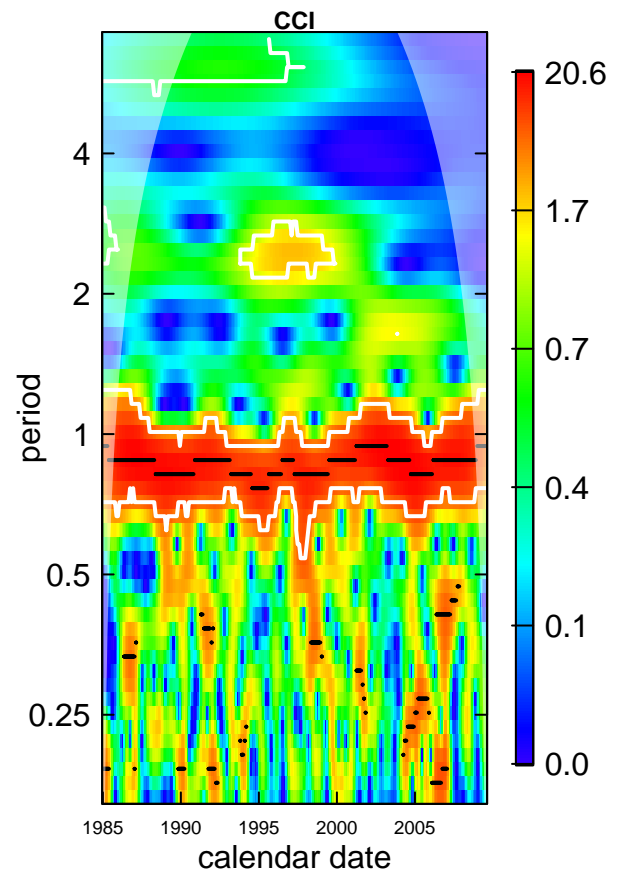
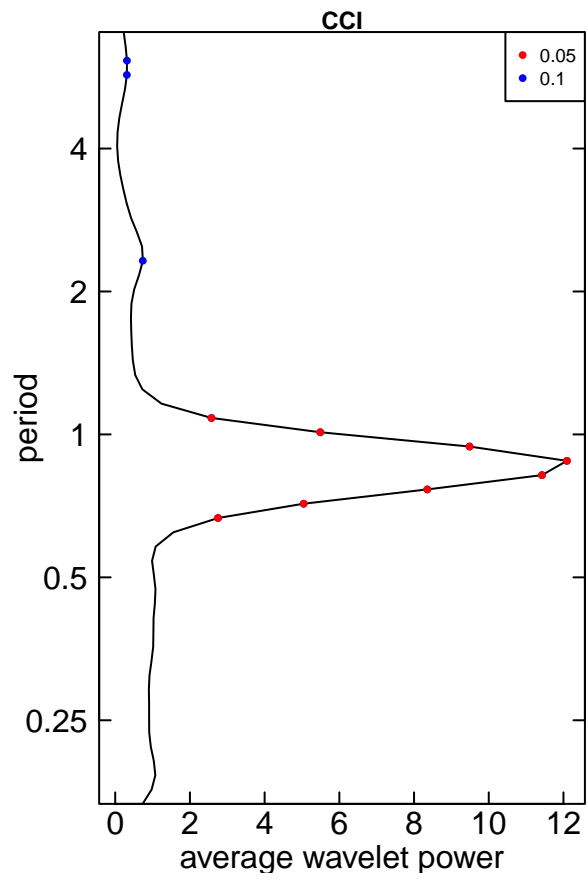
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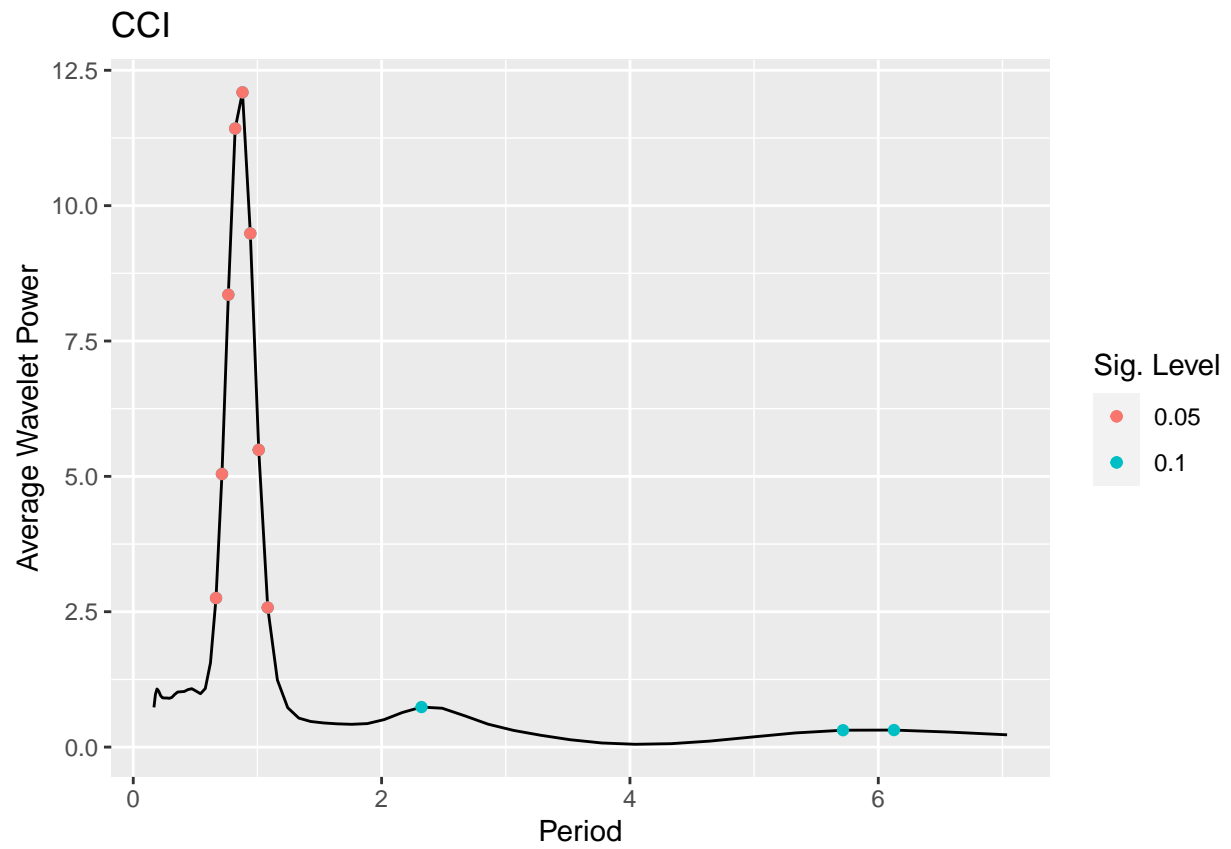
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
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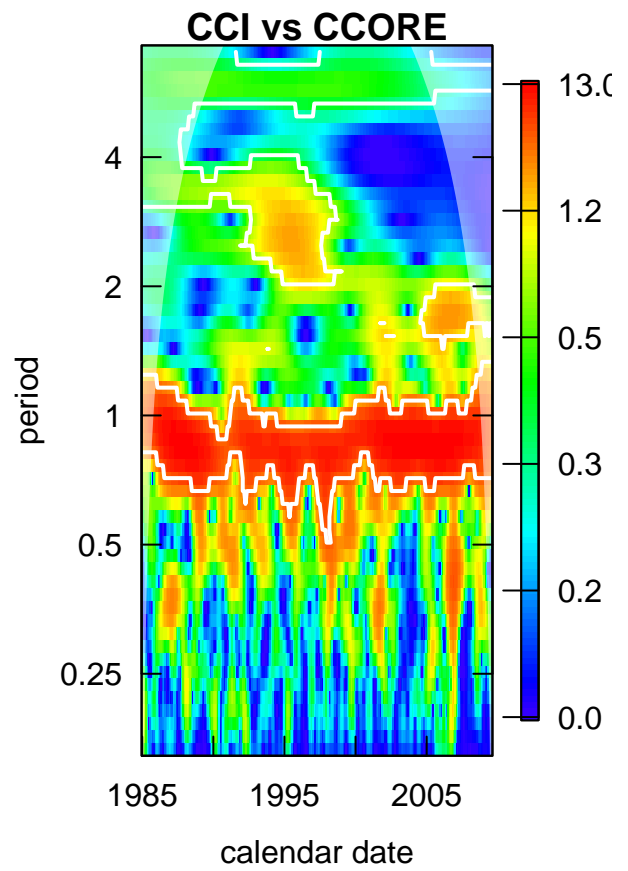
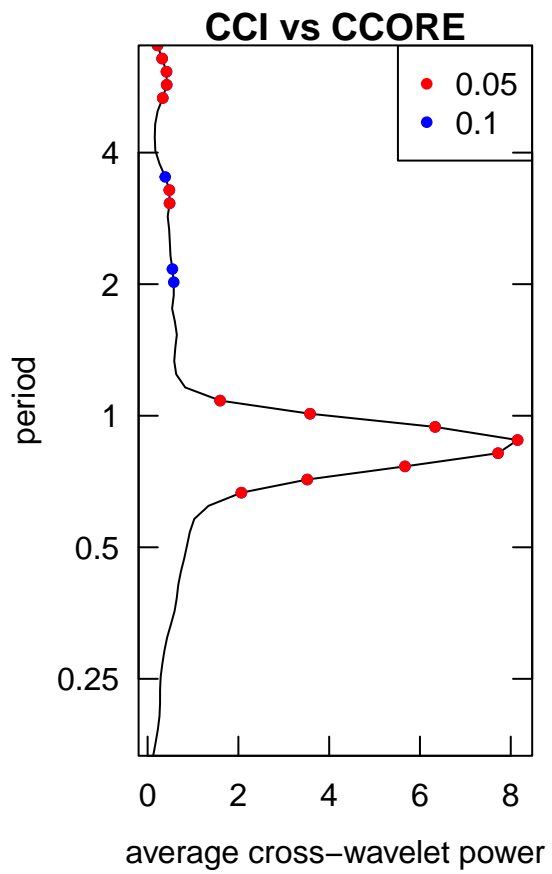


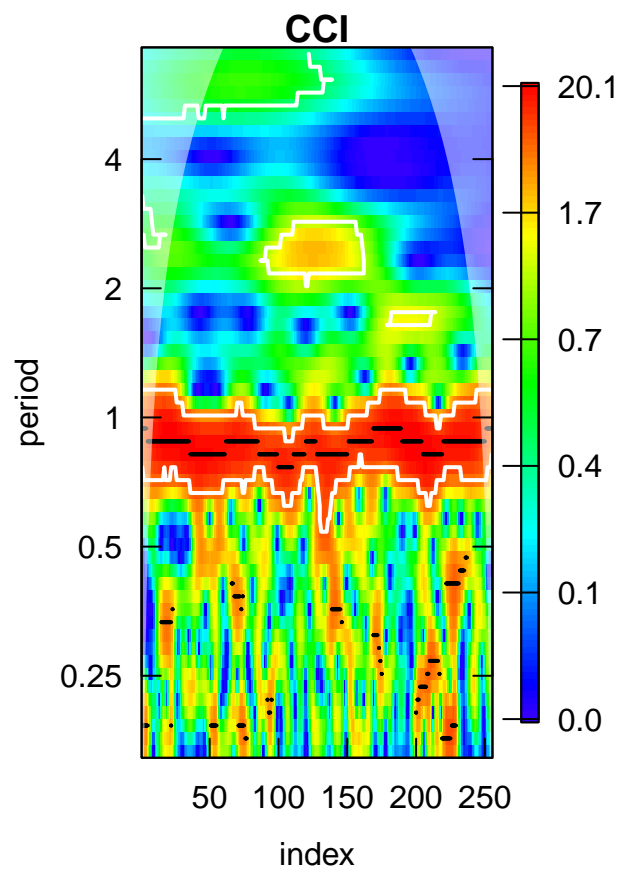


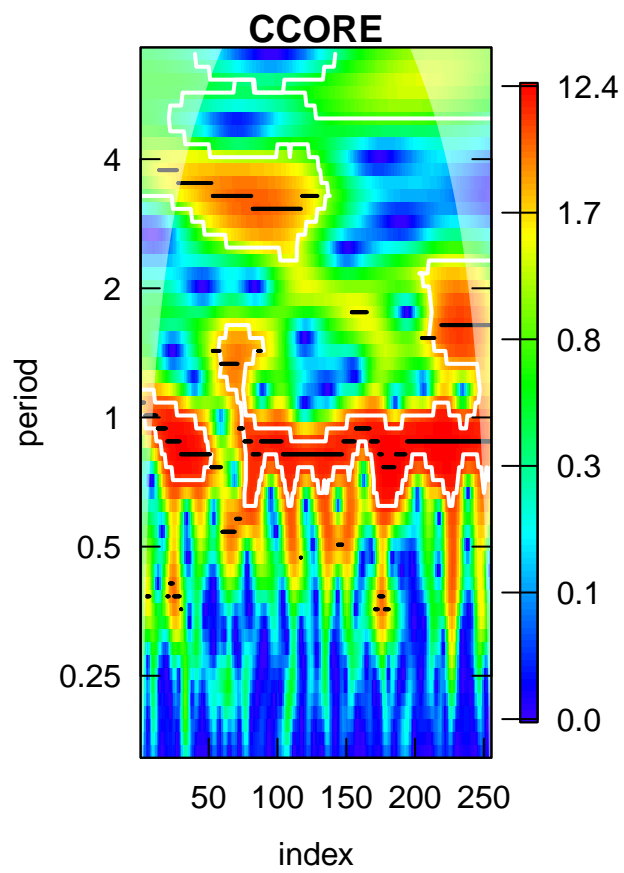


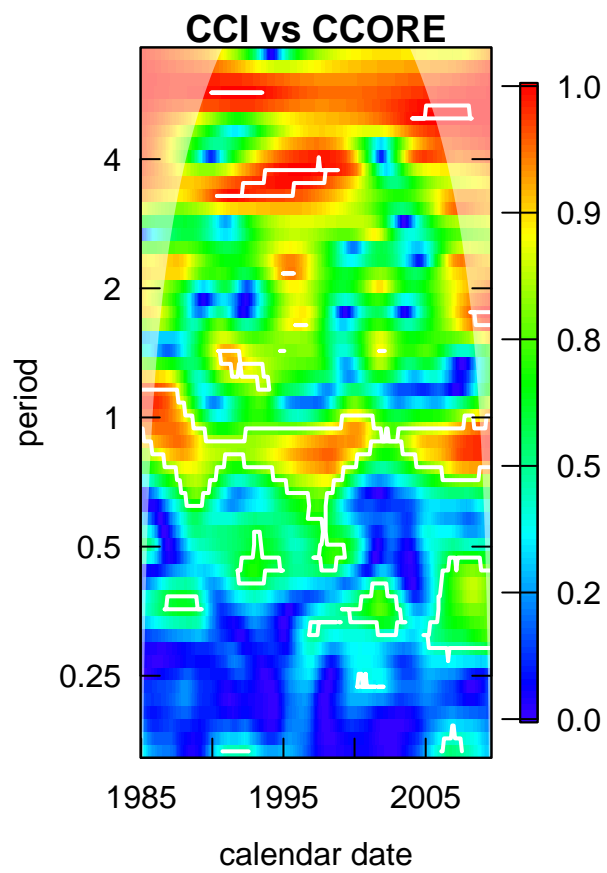
```
## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
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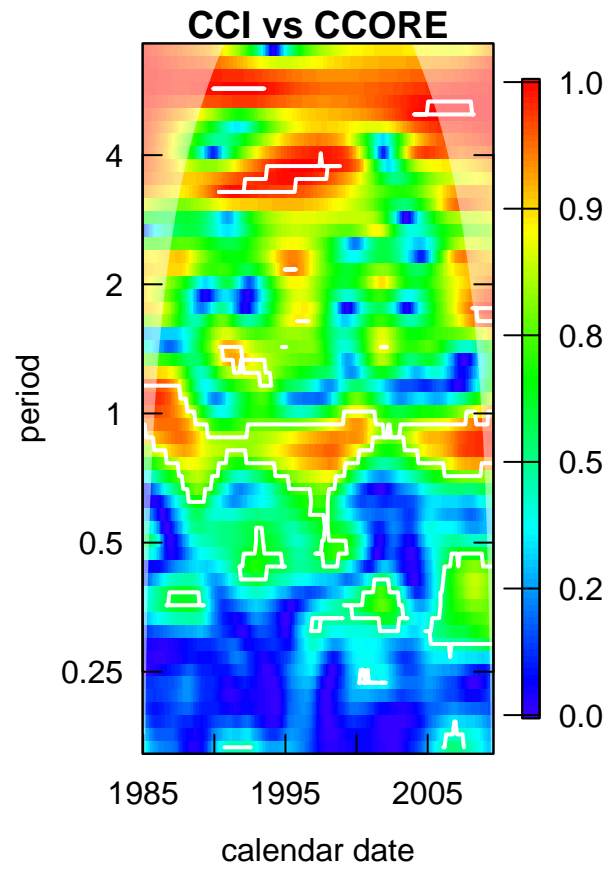
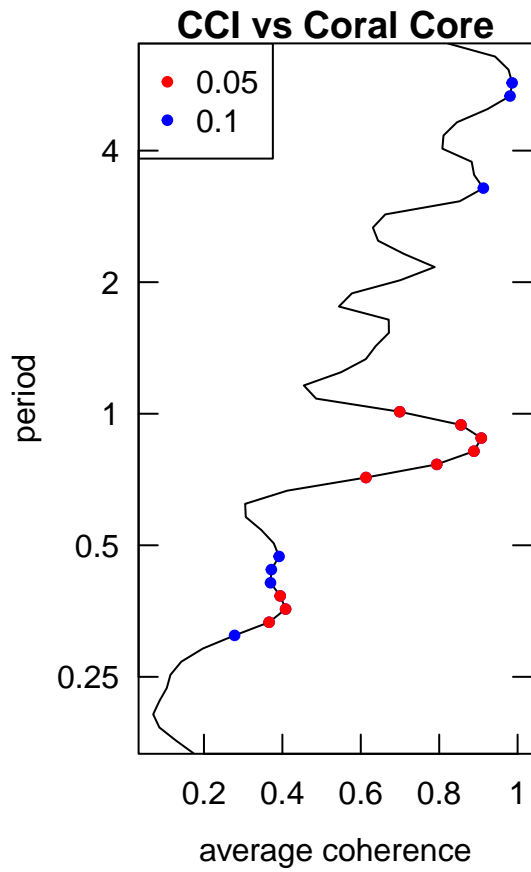
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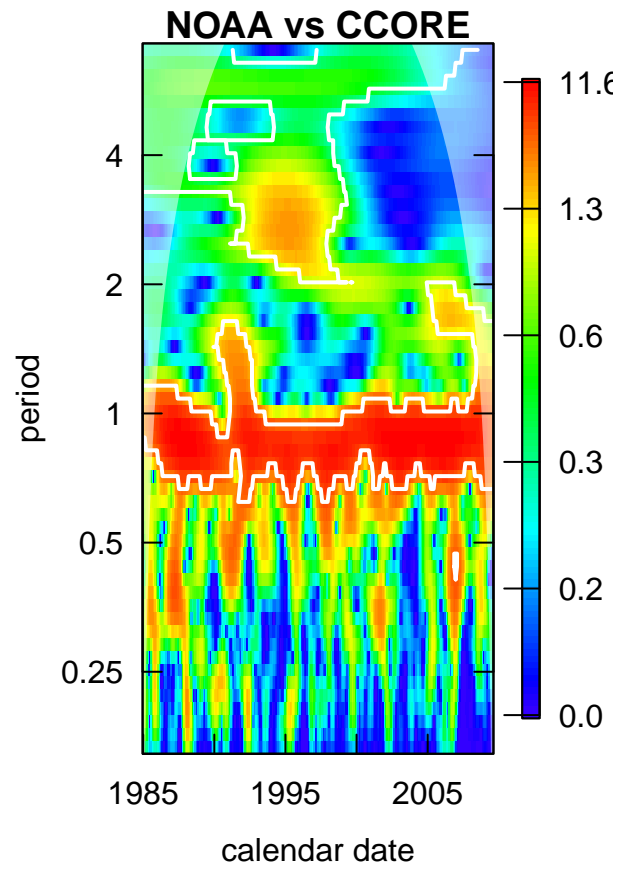
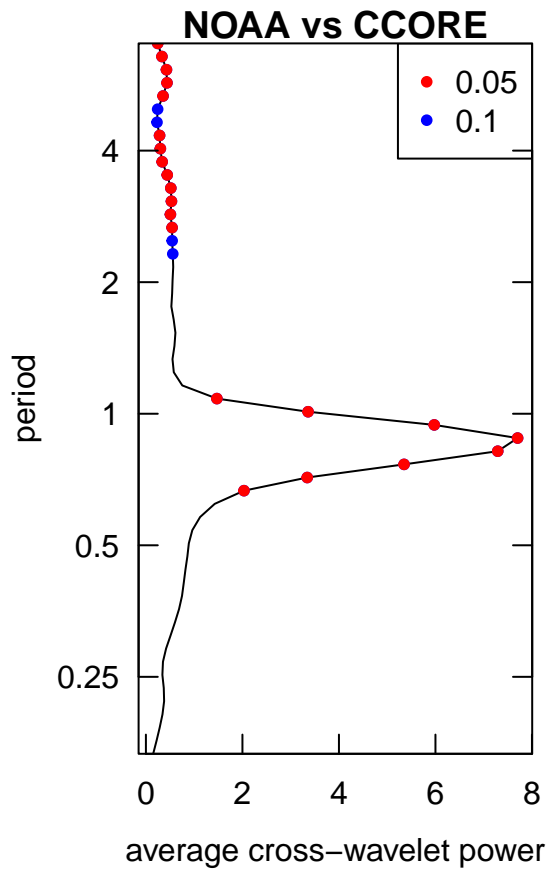


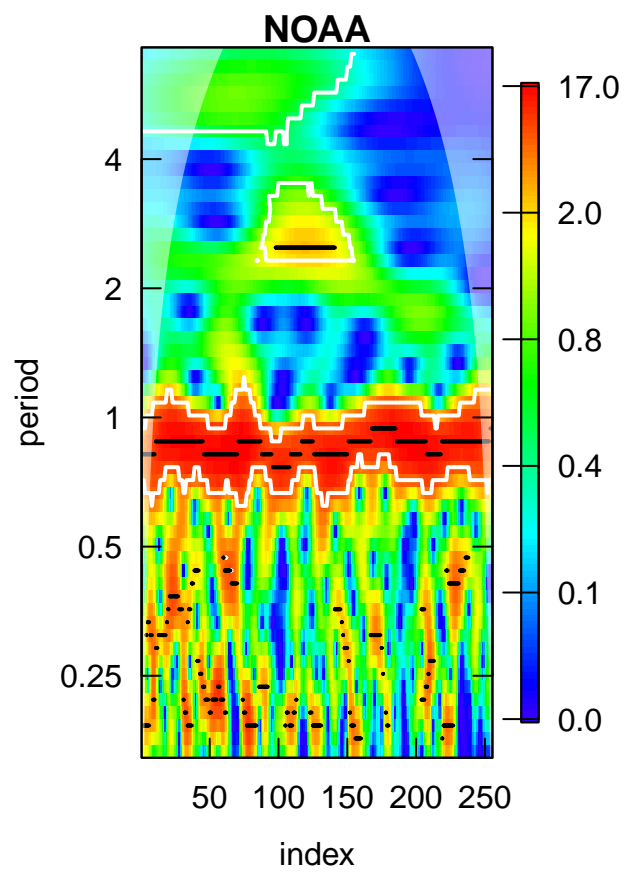


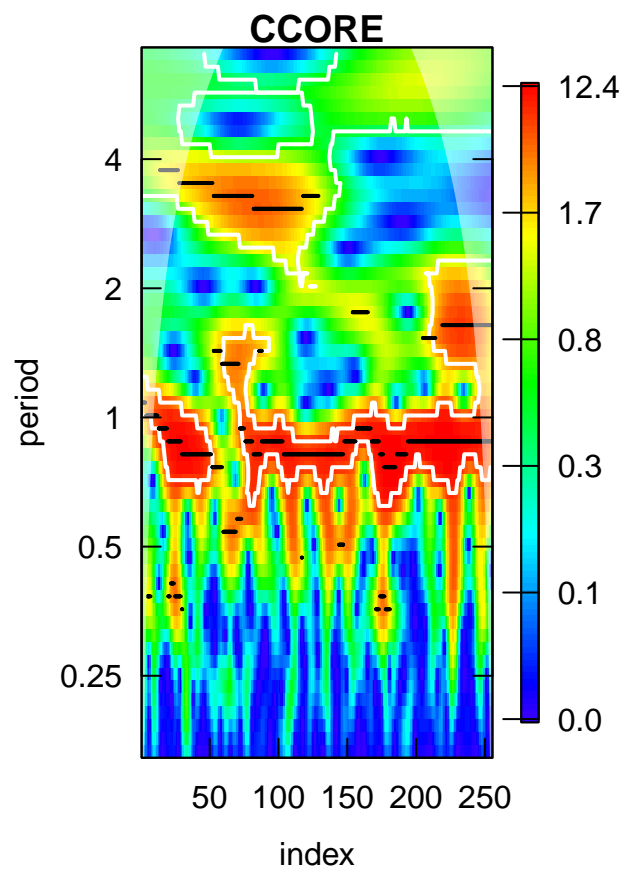


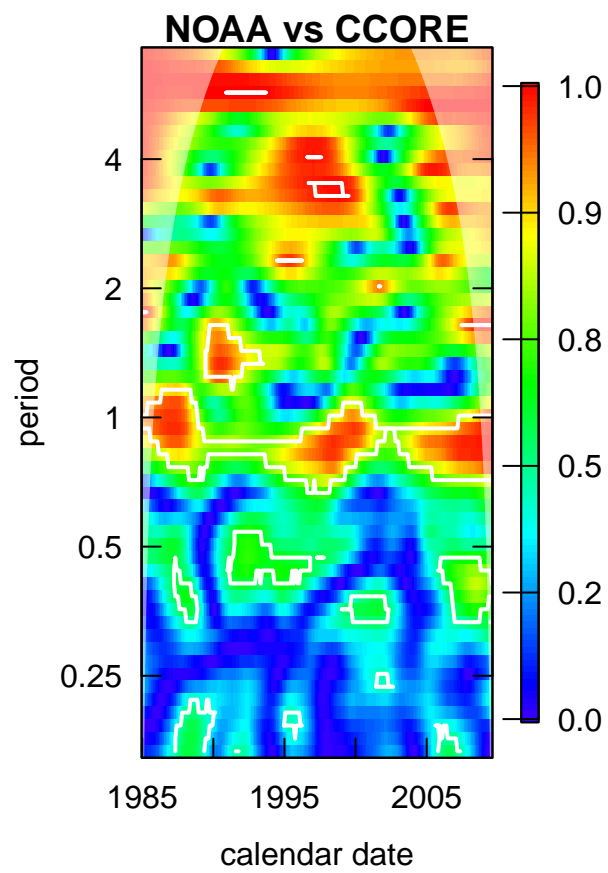
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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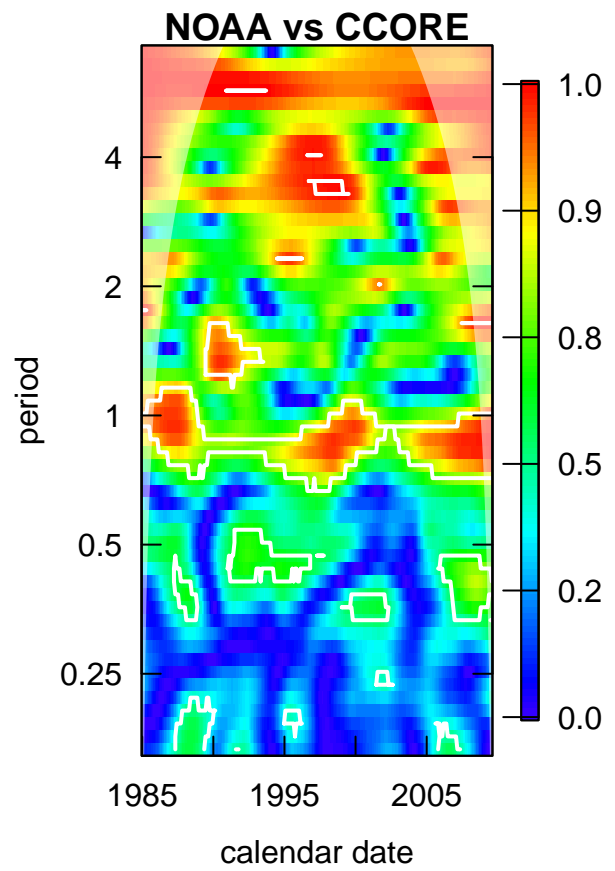
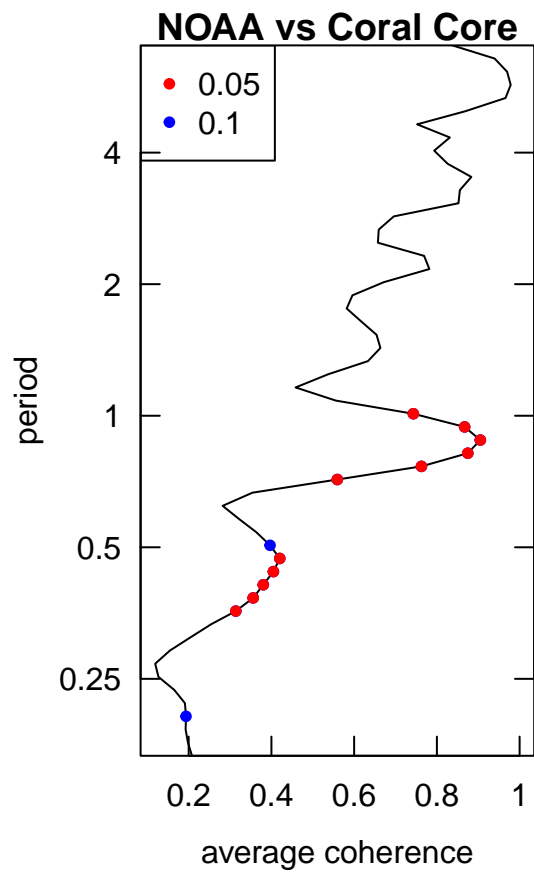
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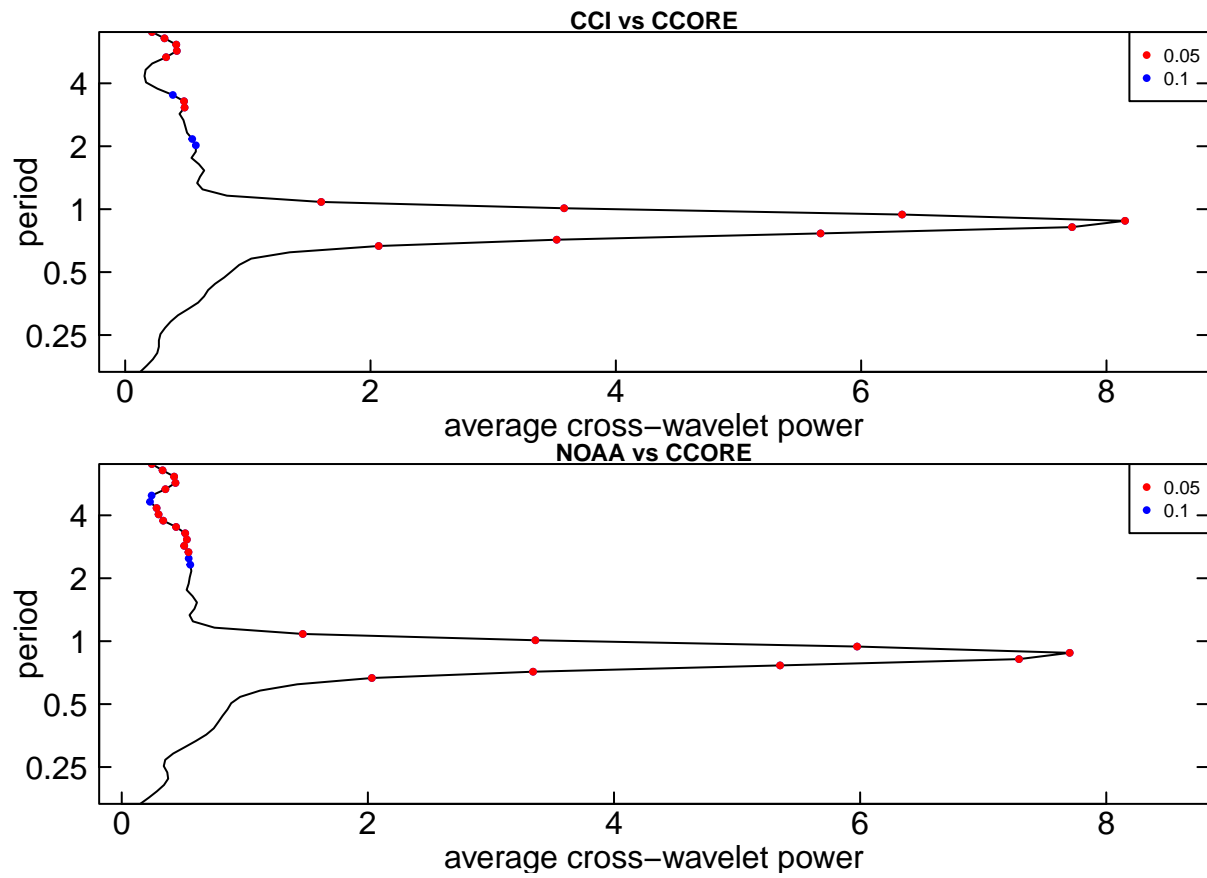


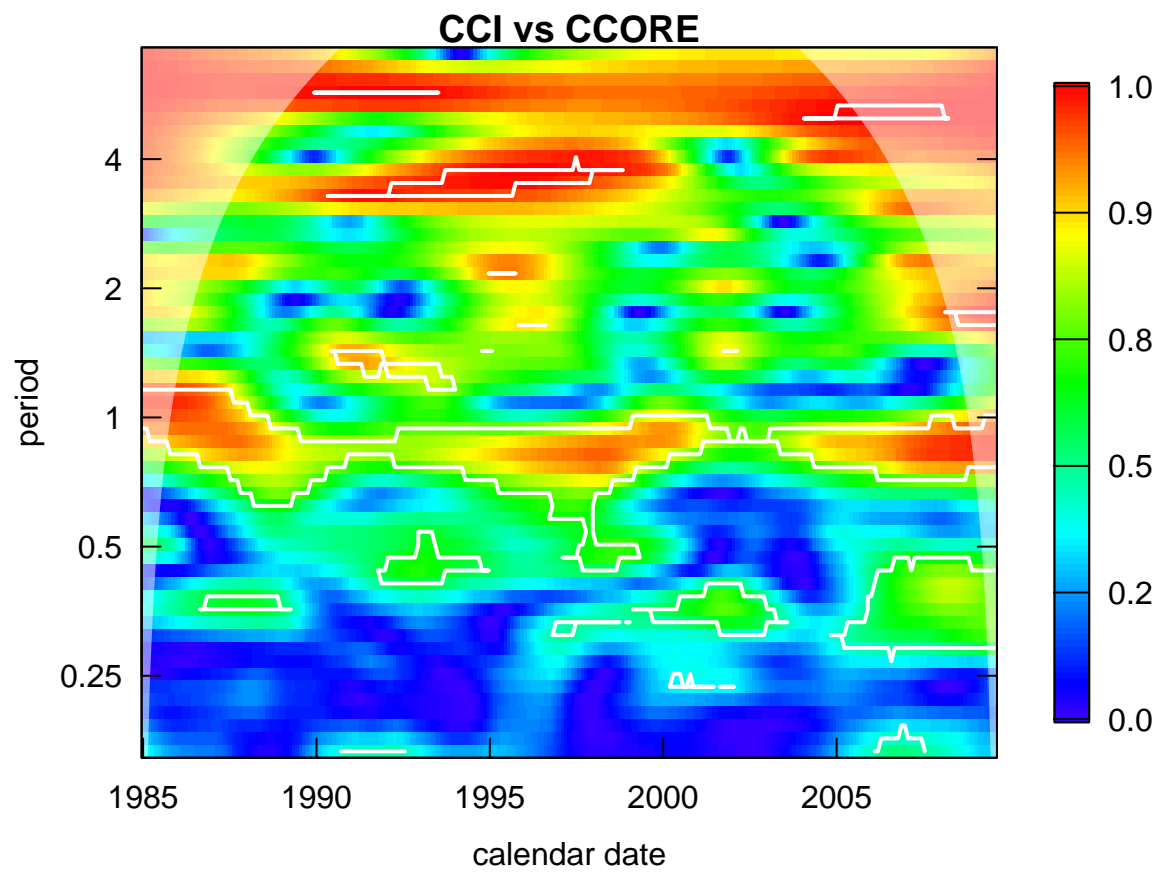


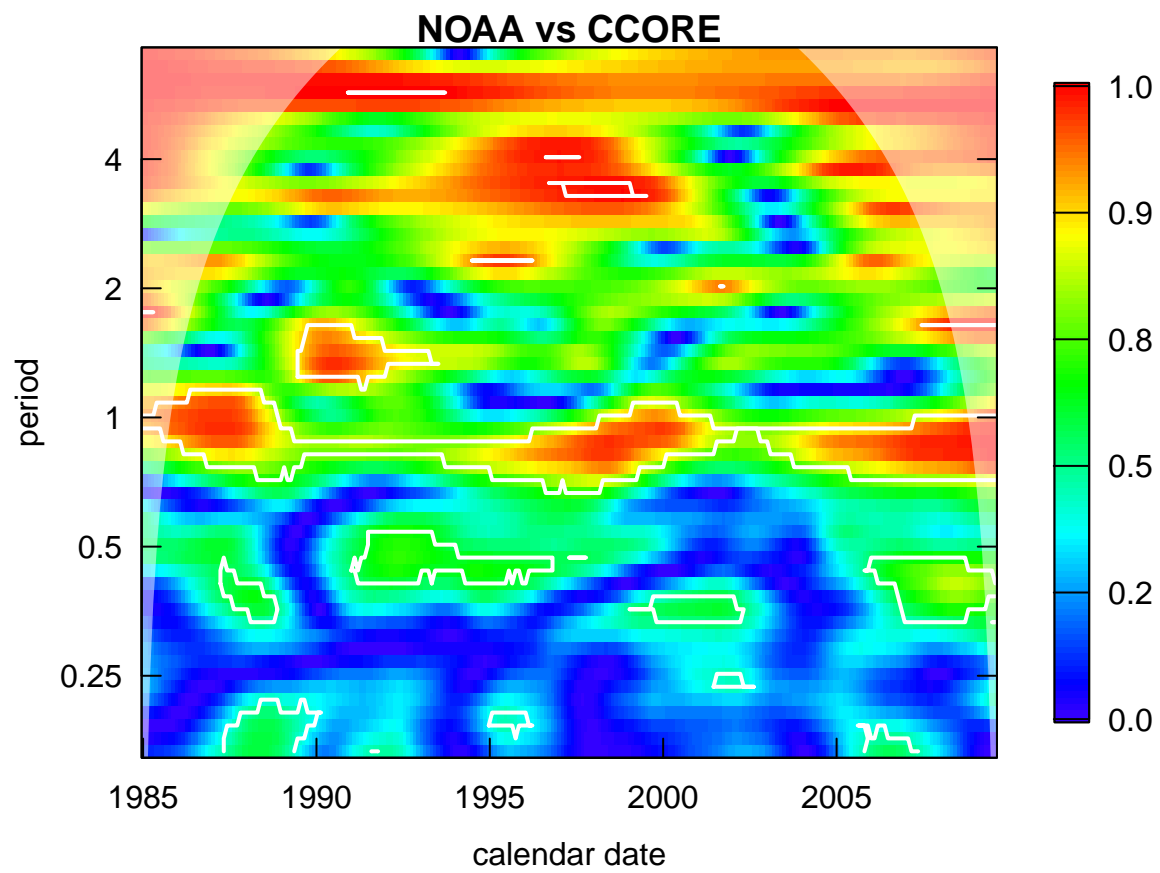






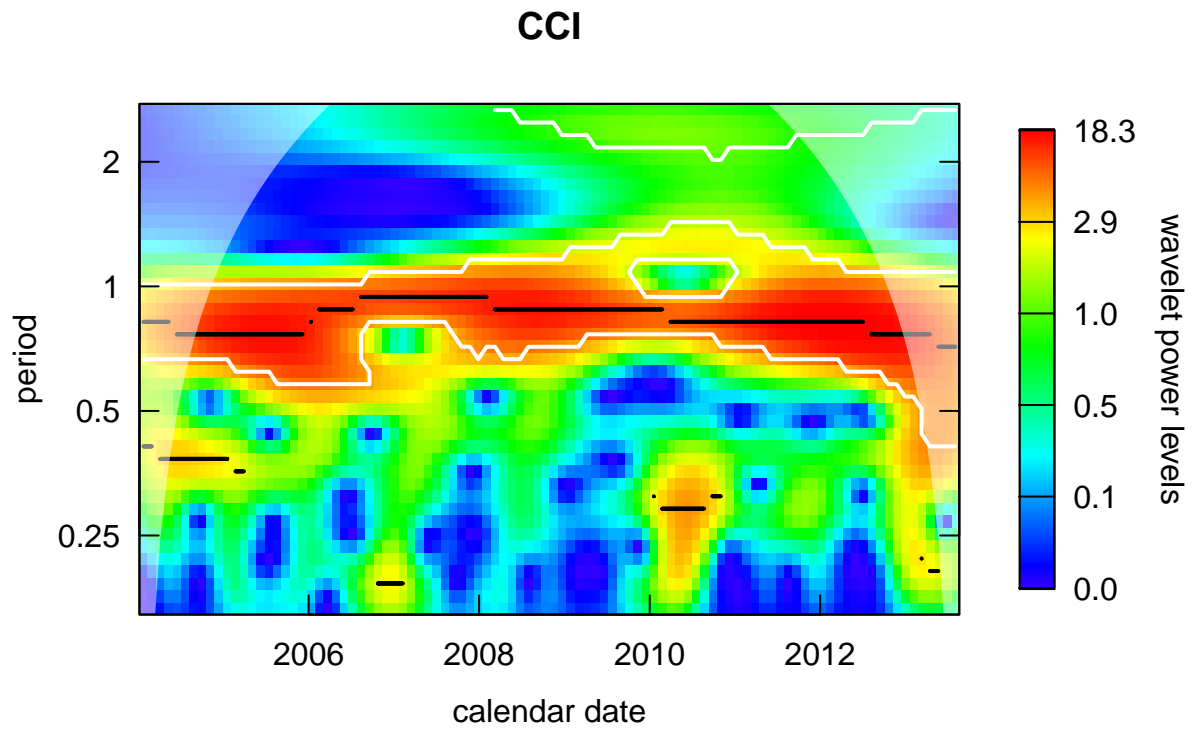


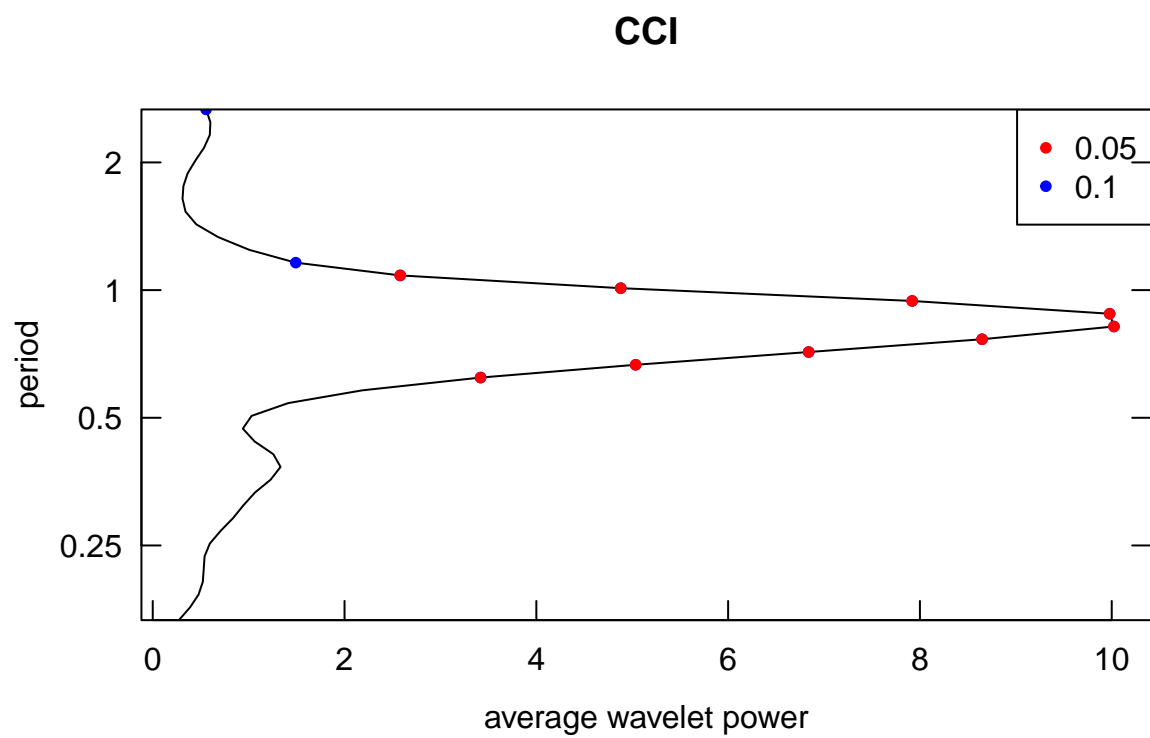


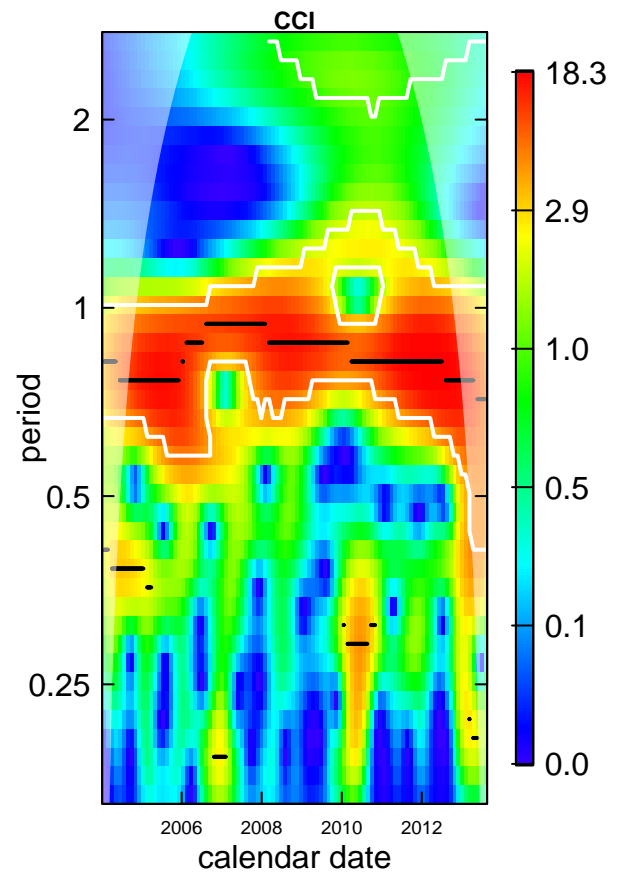
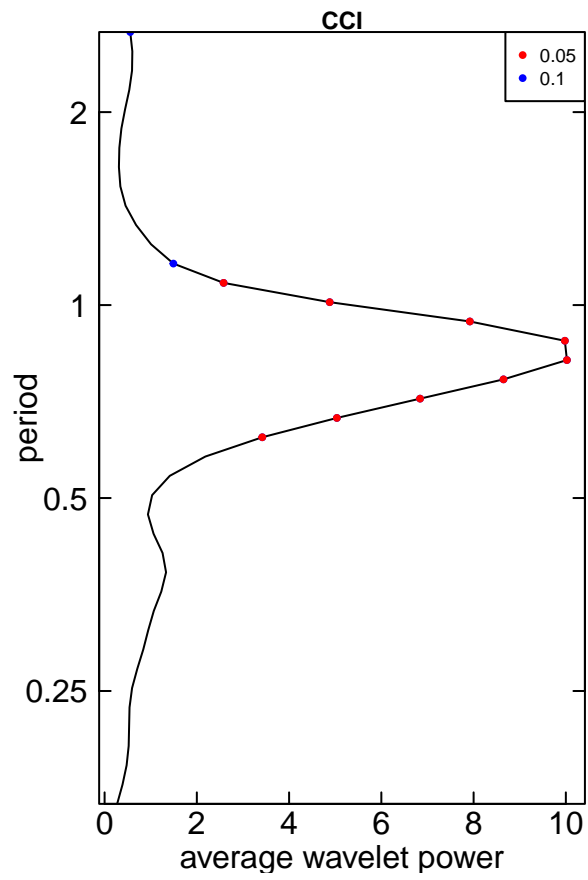


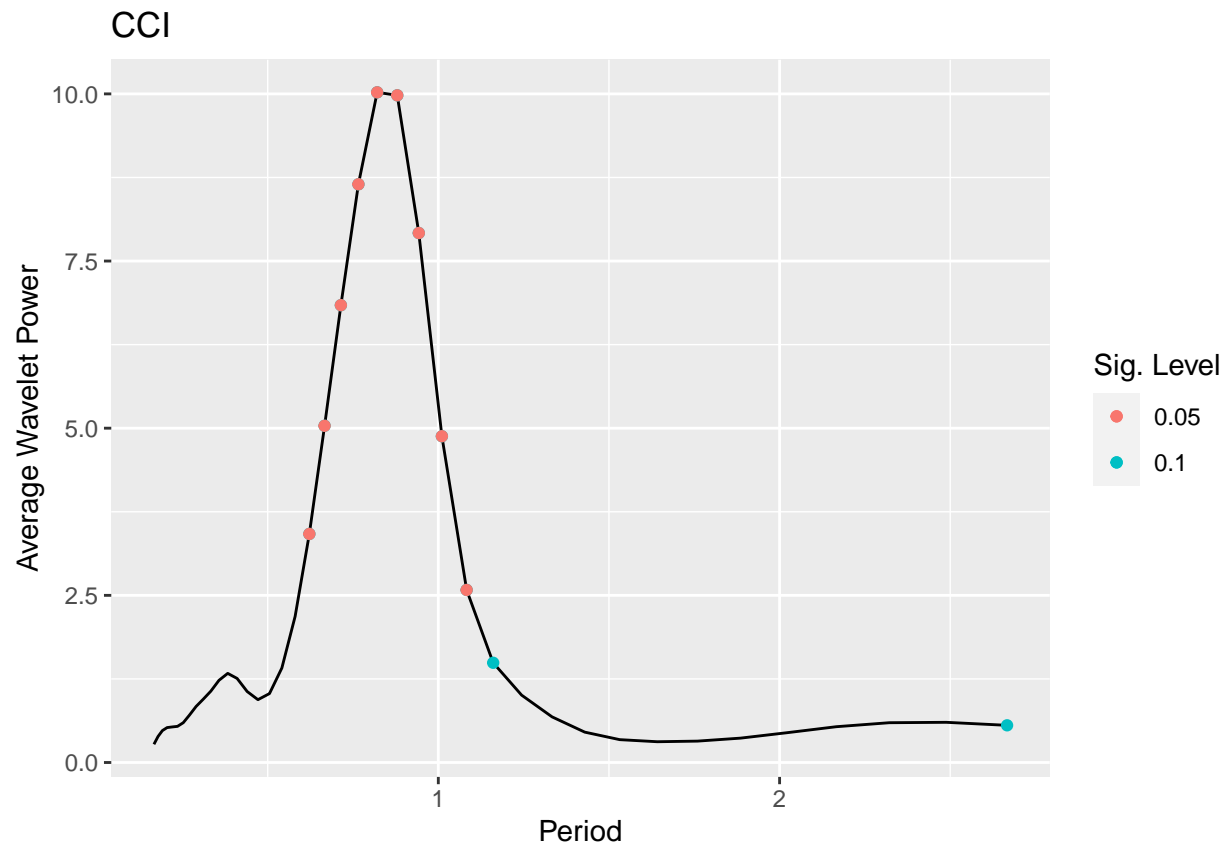
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```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```



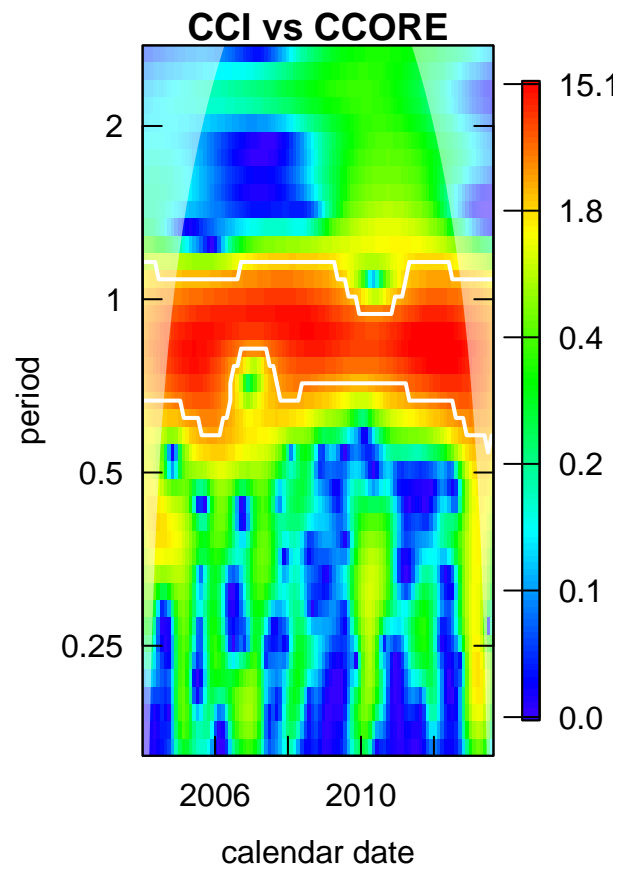
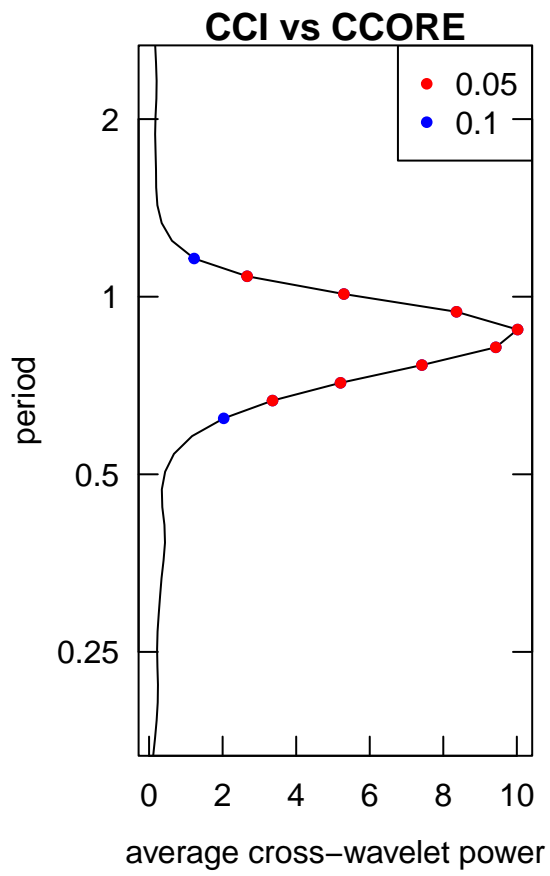


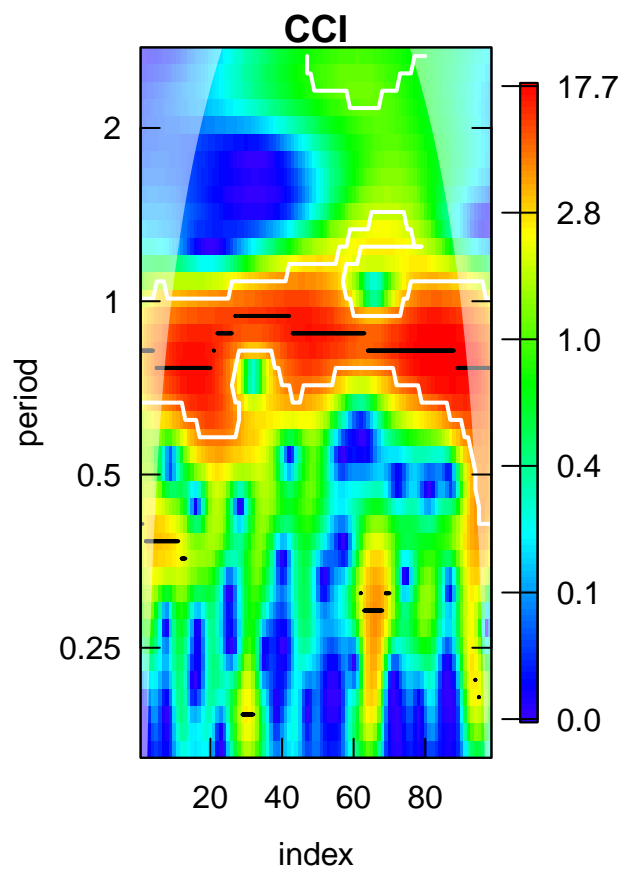


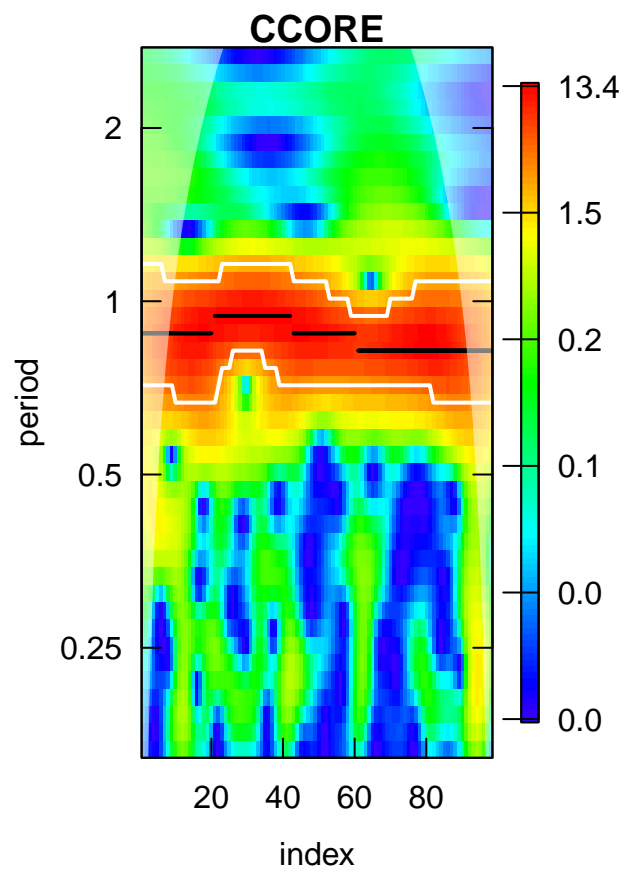


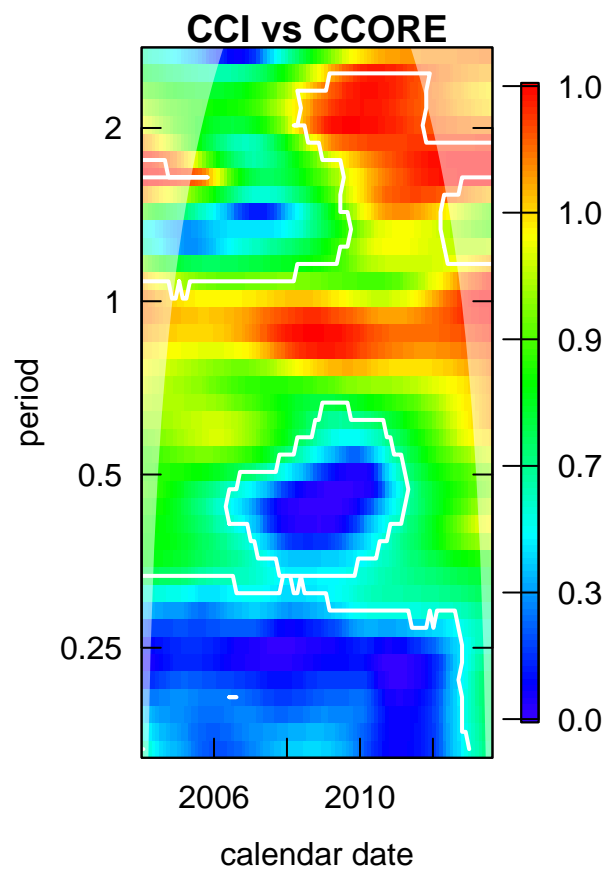
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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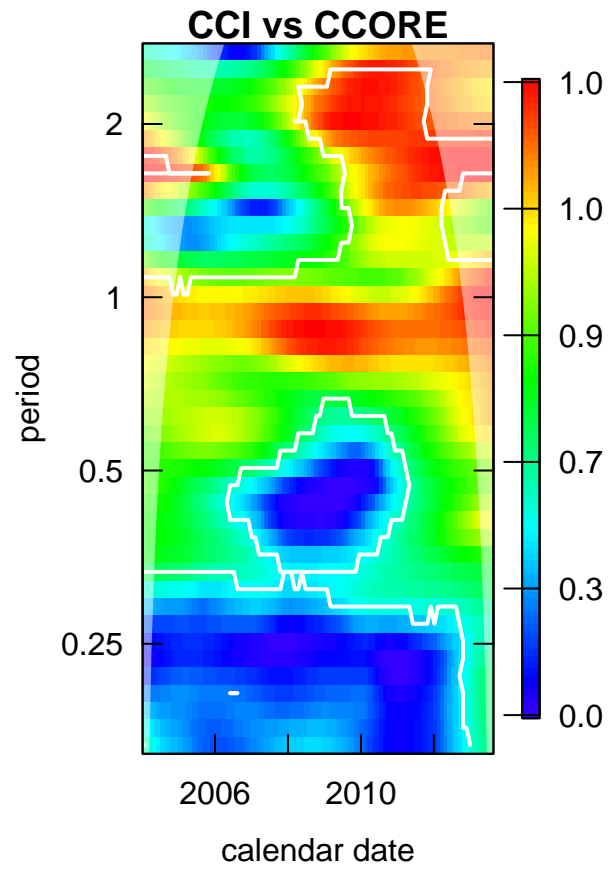
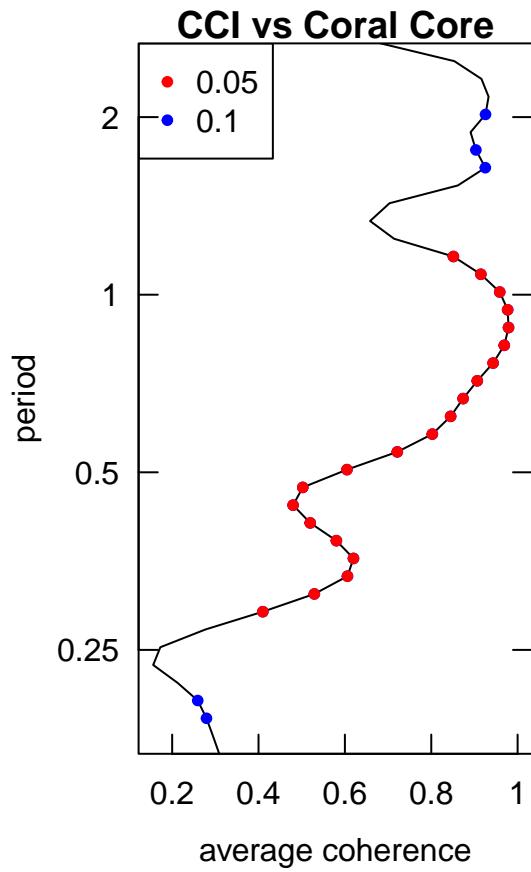
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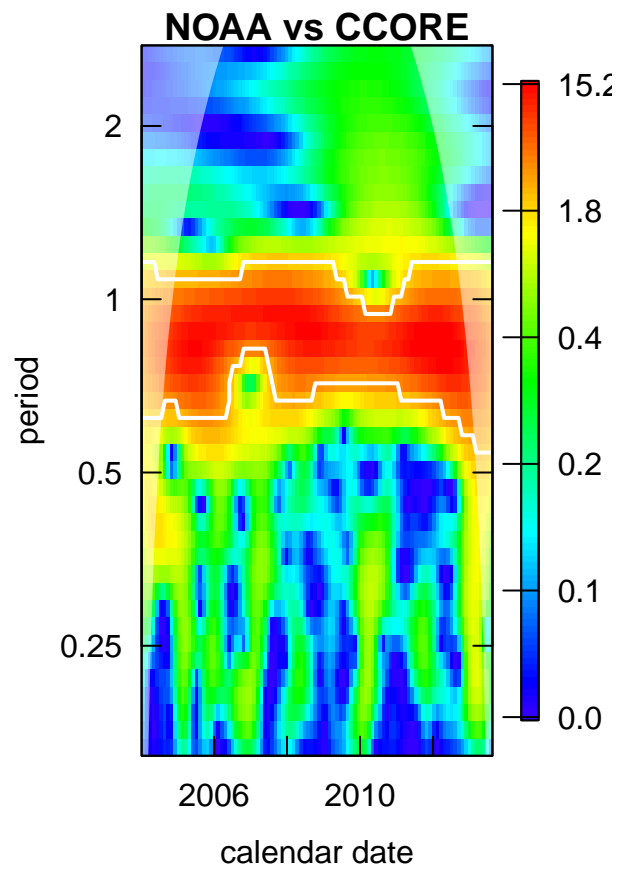
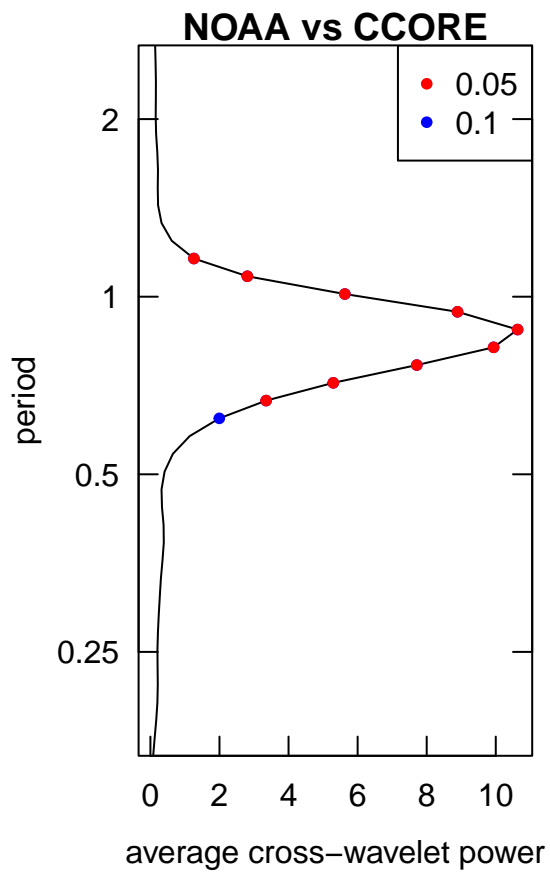


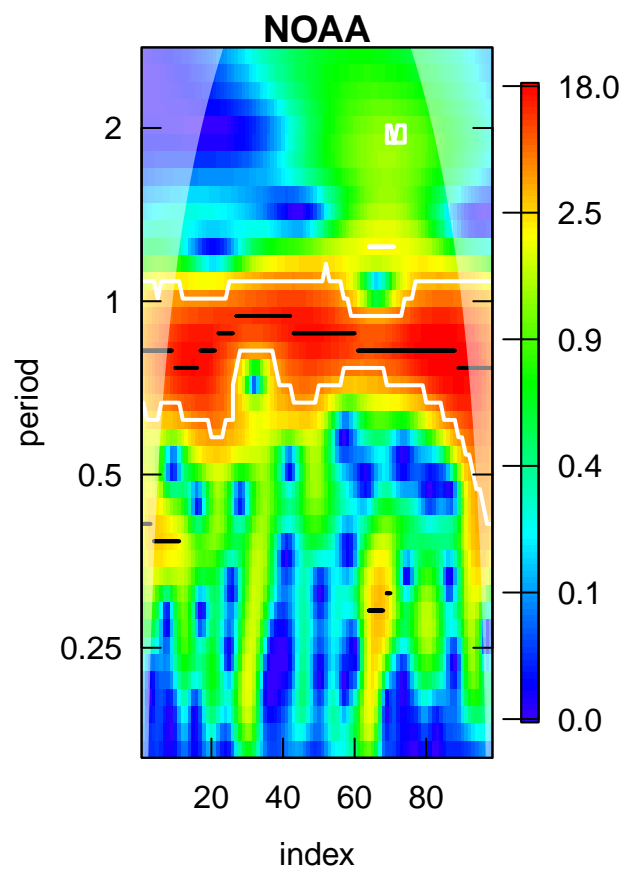


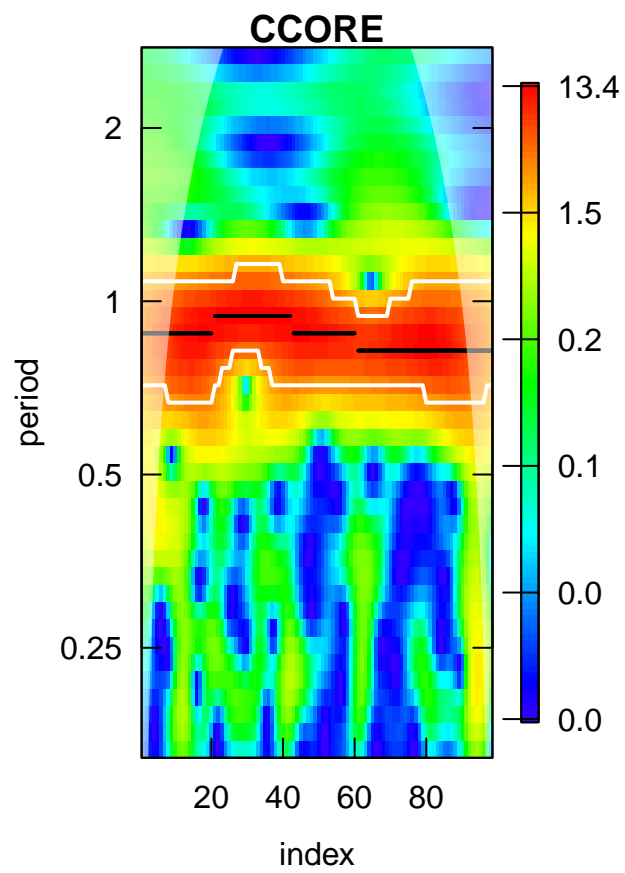


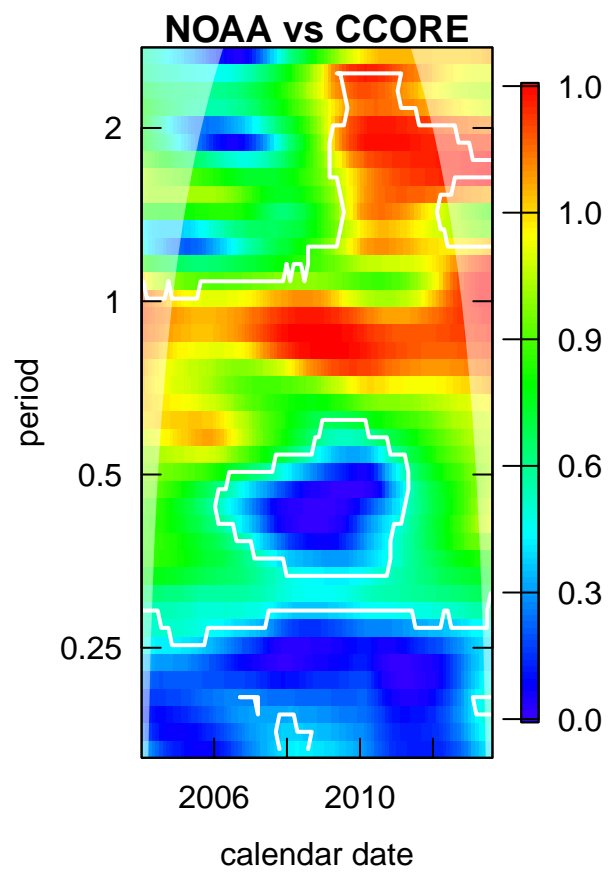
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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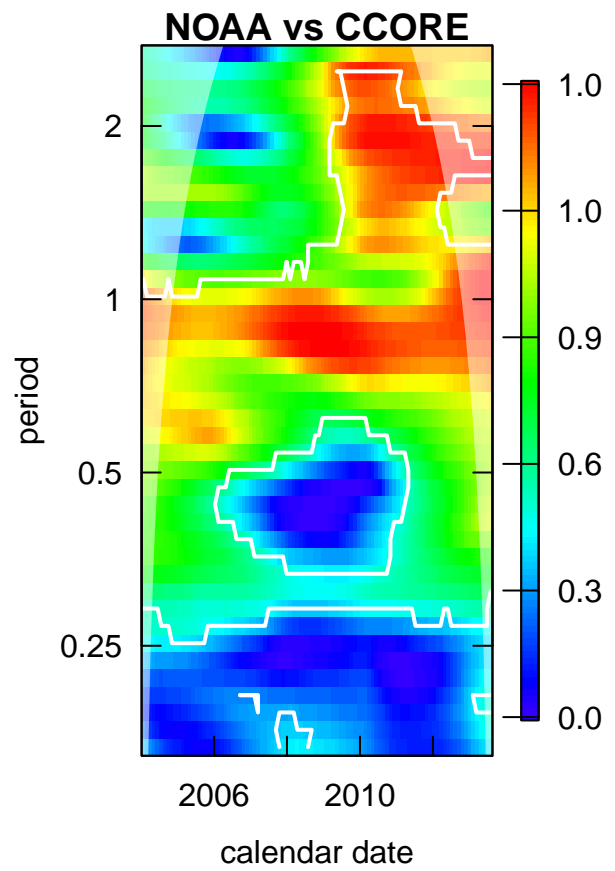
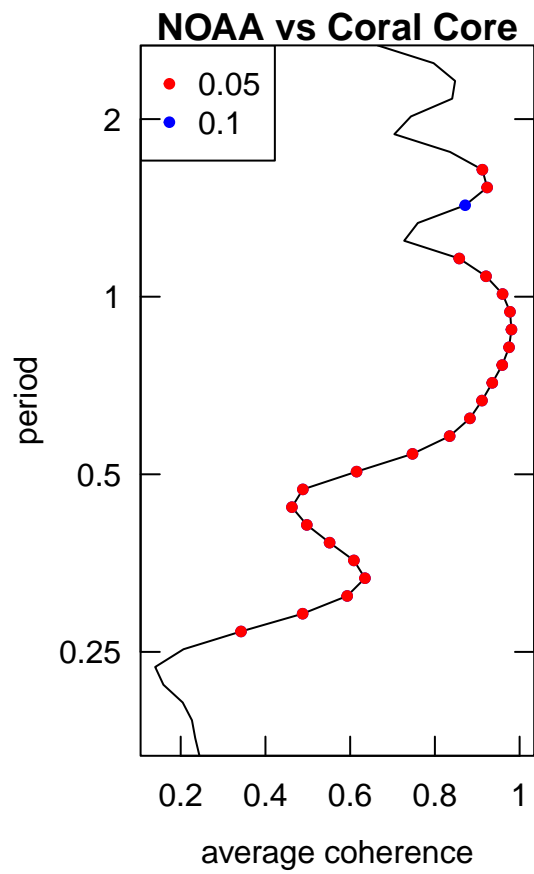
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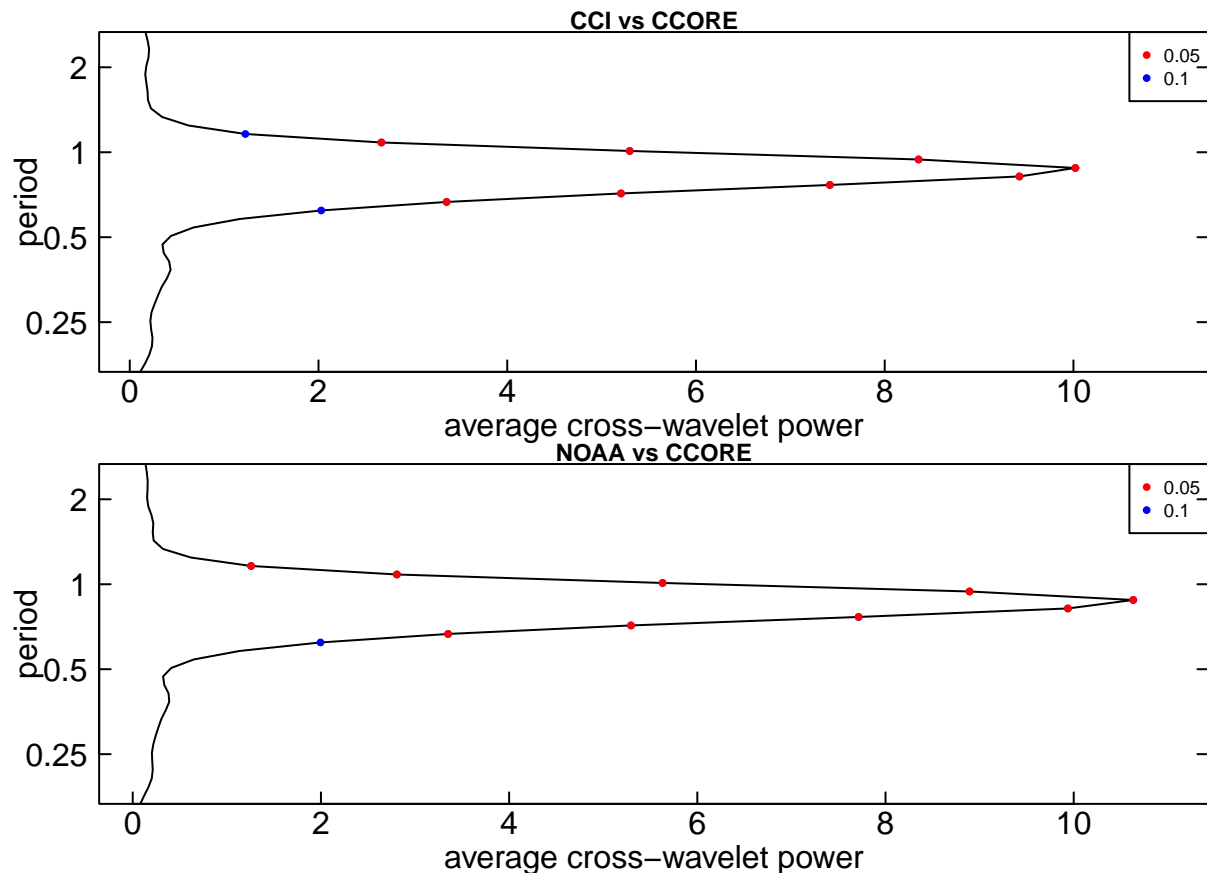


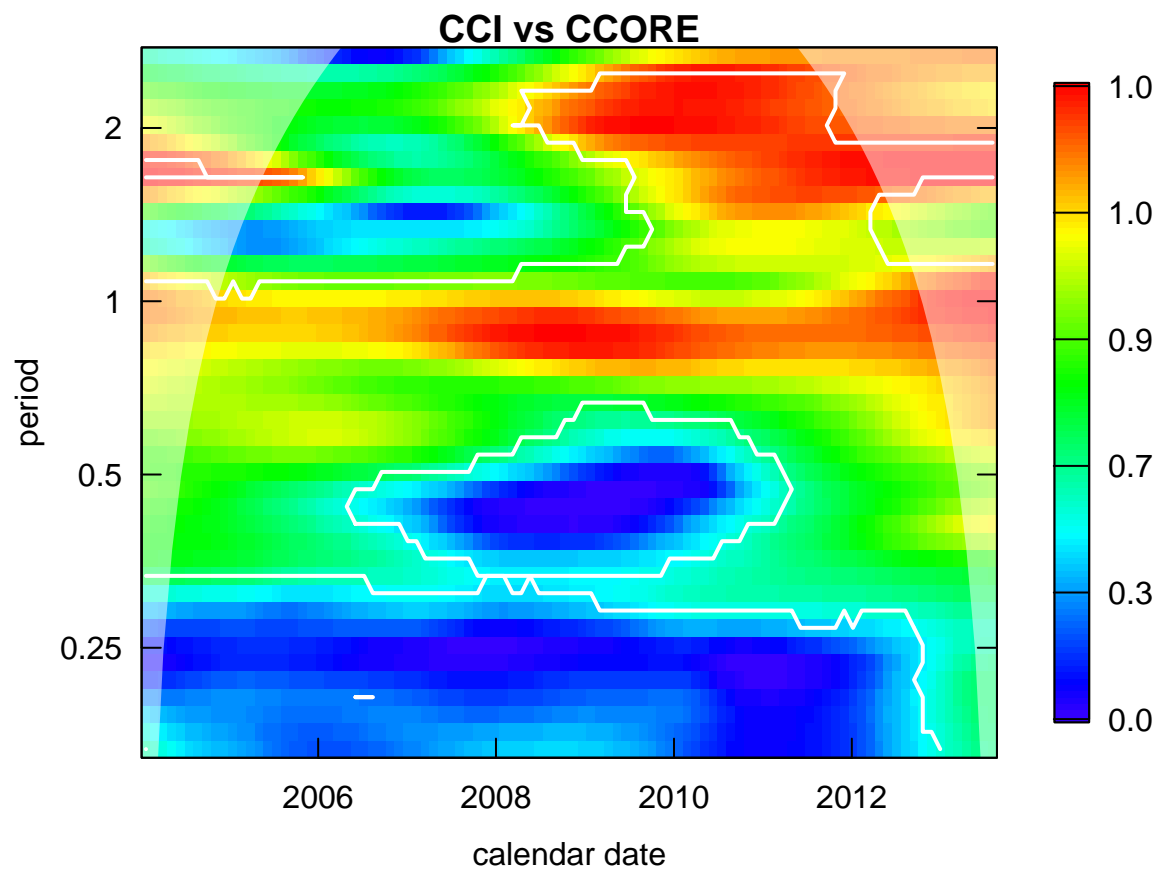


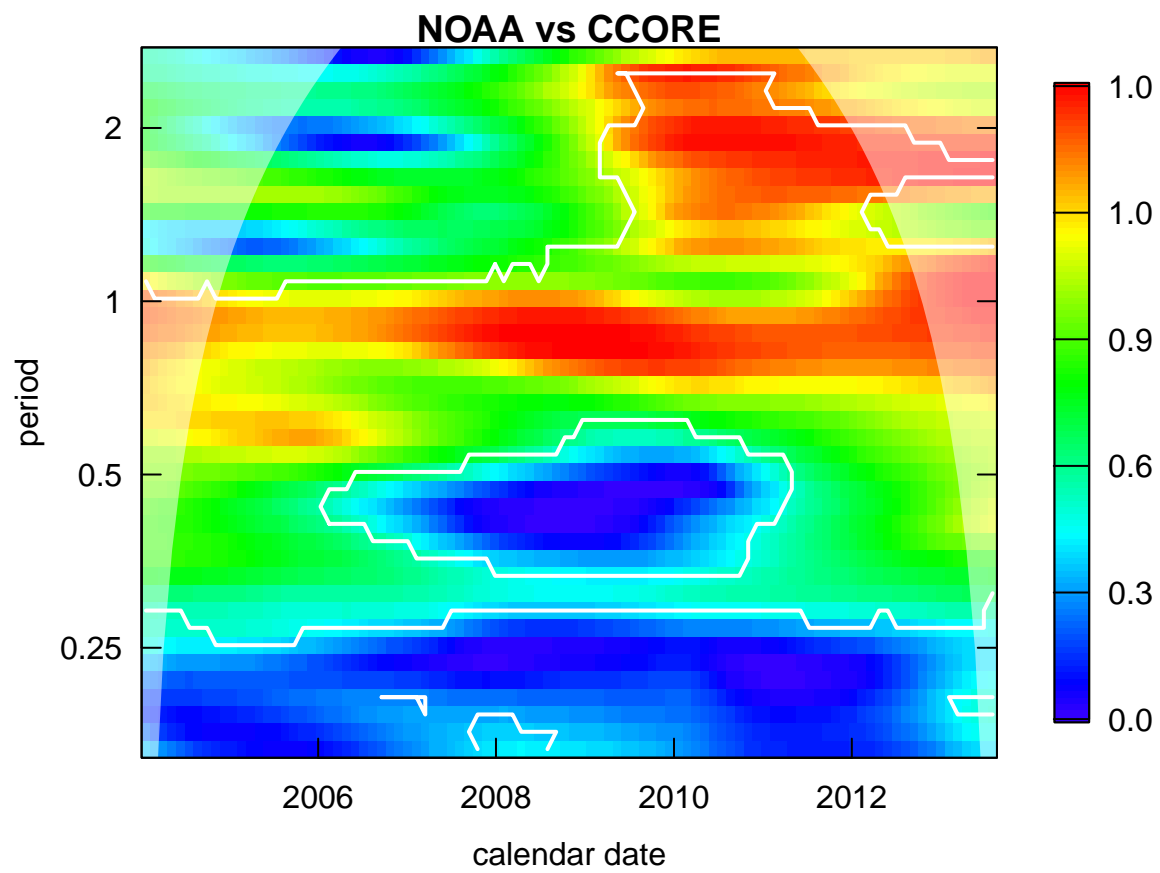








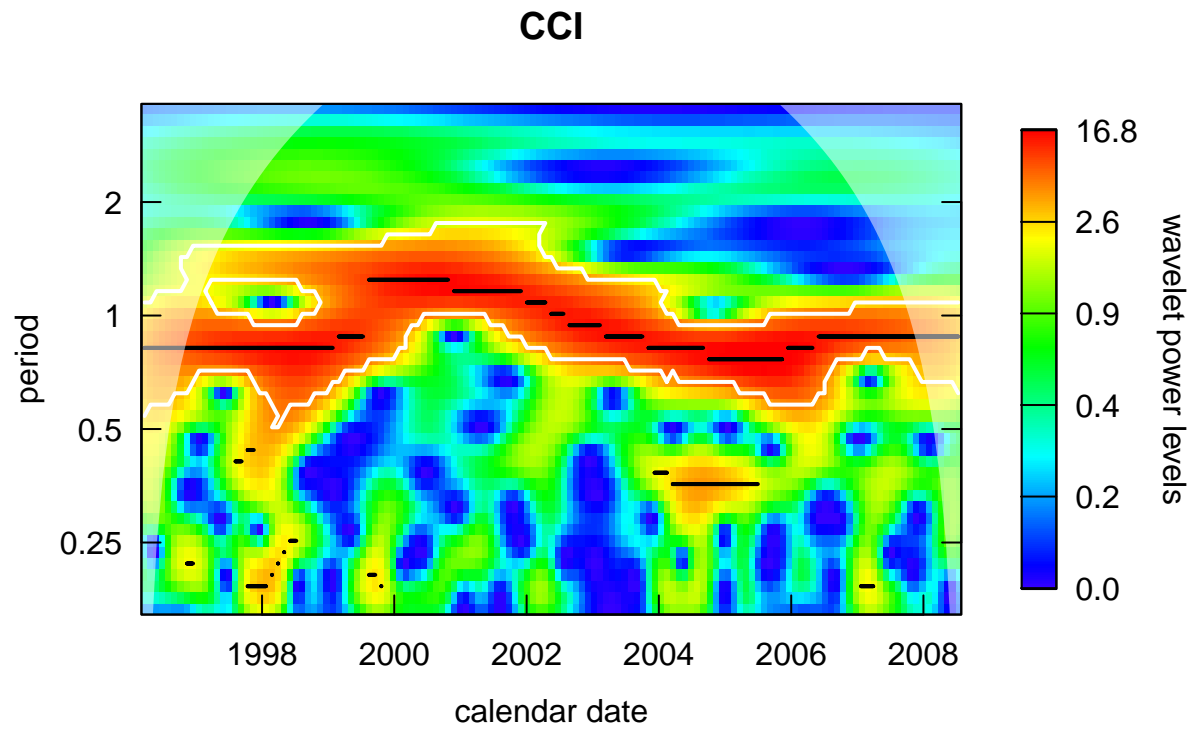


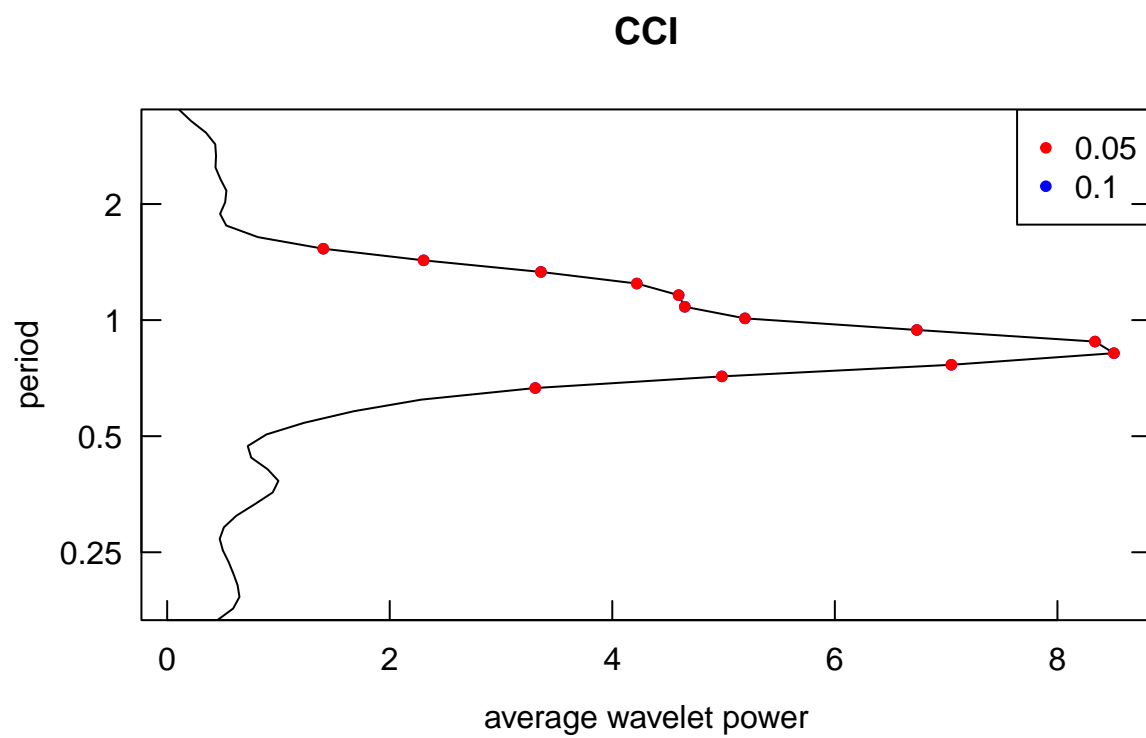


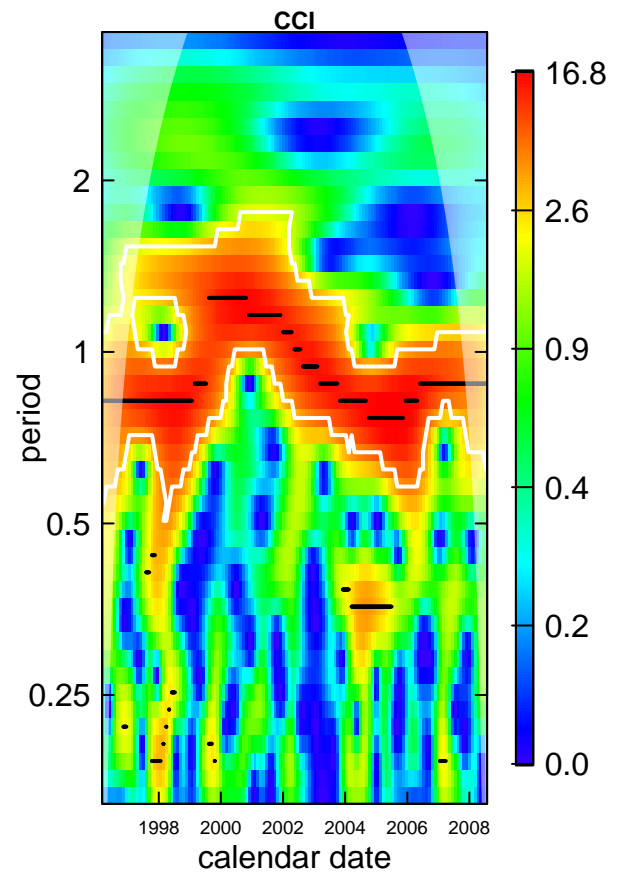
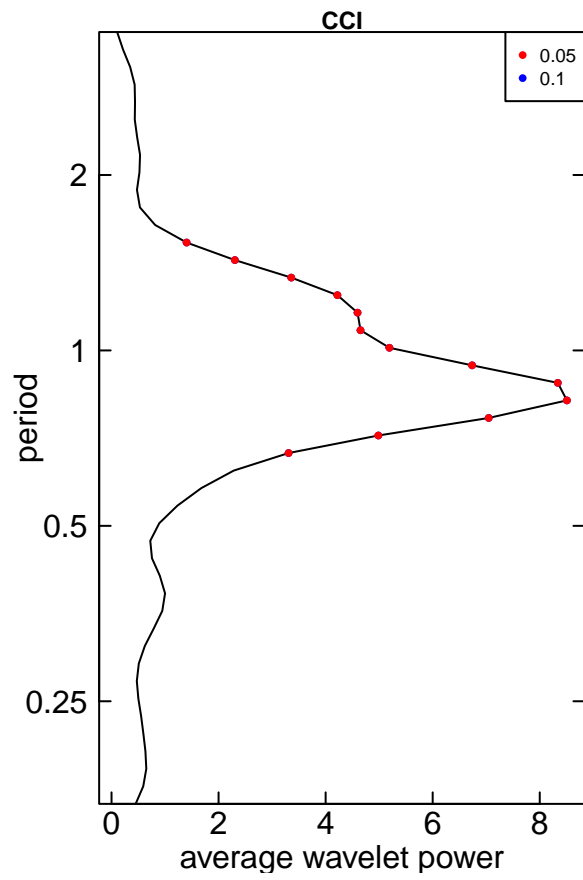
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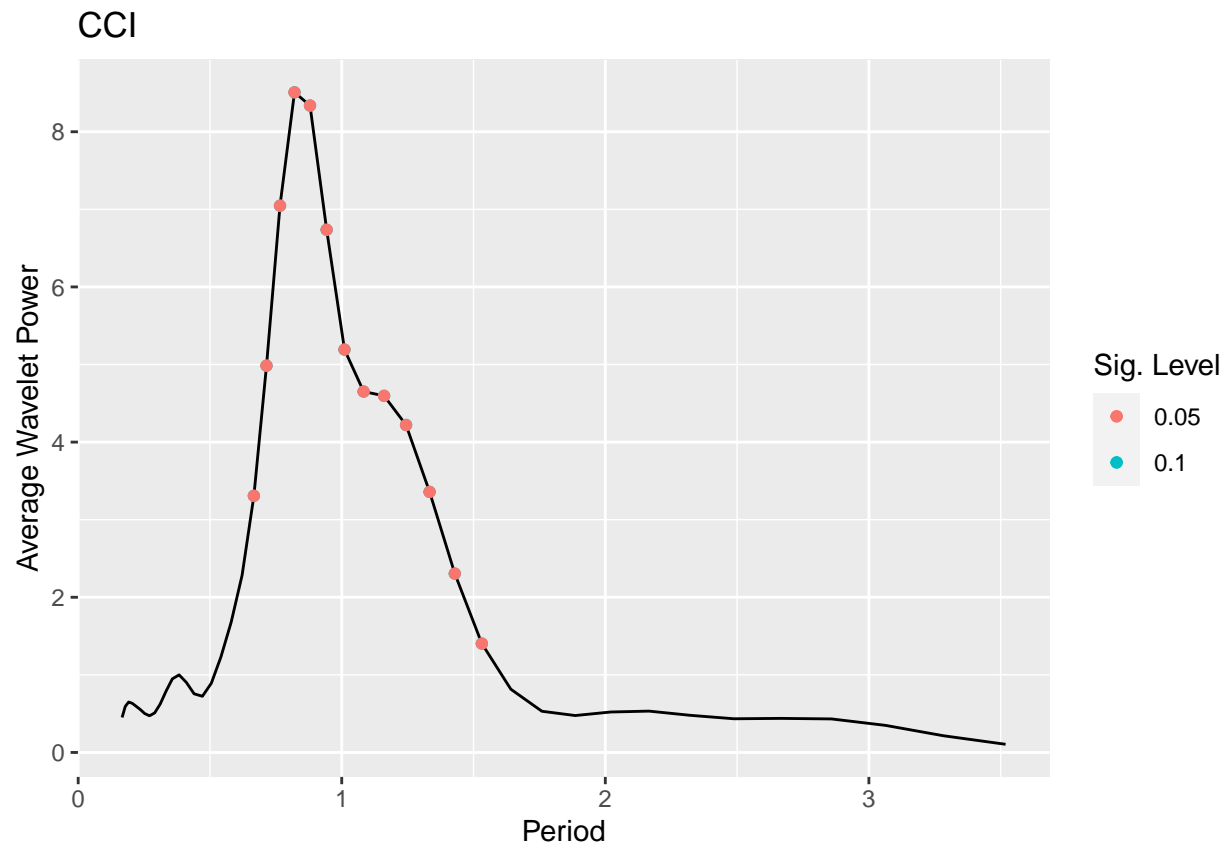
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```

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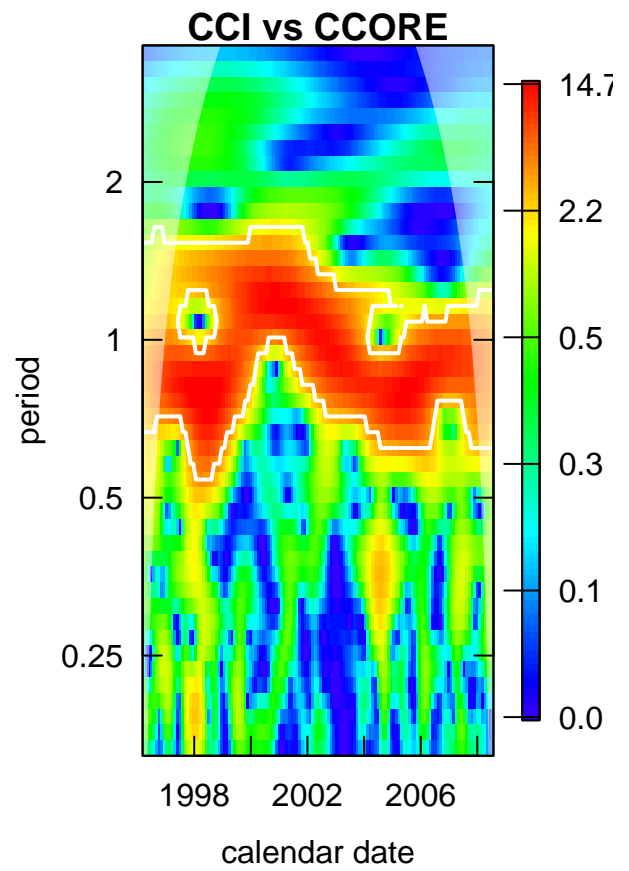
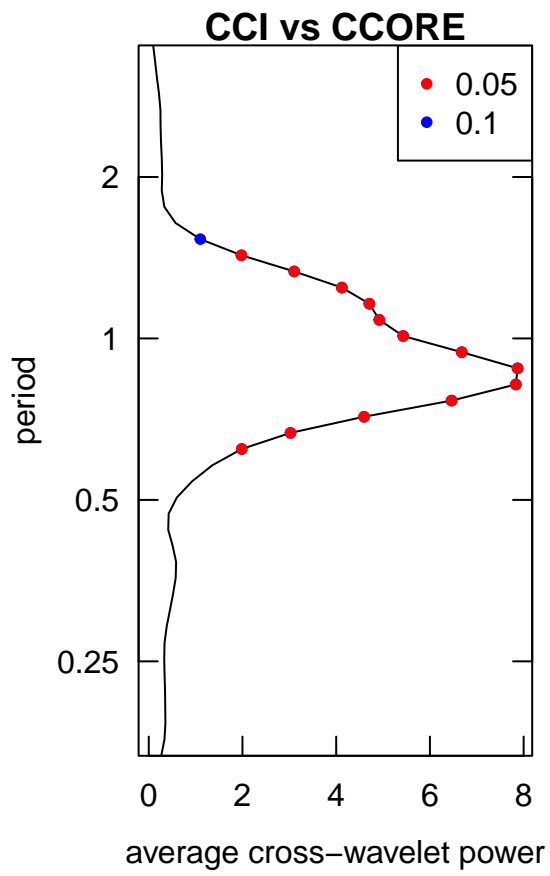


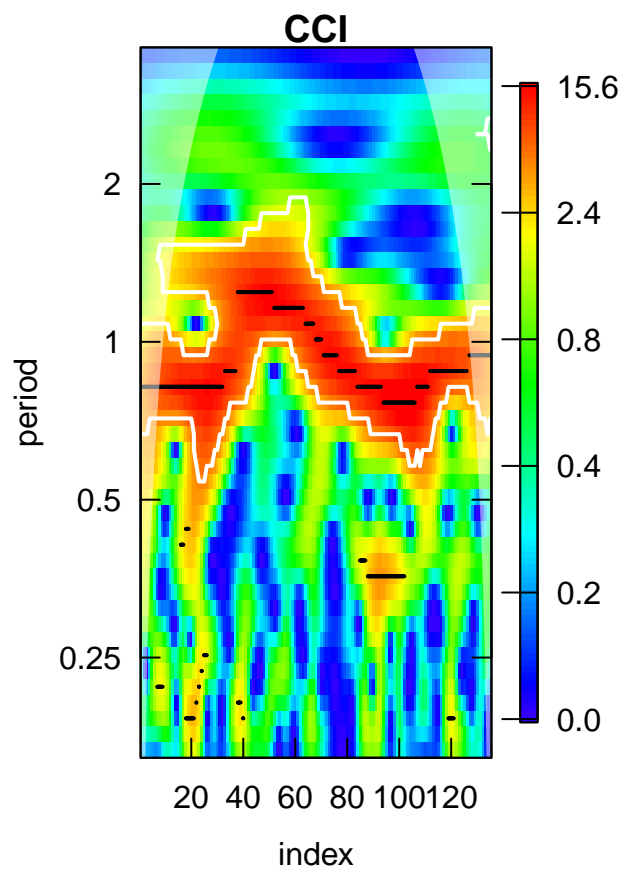


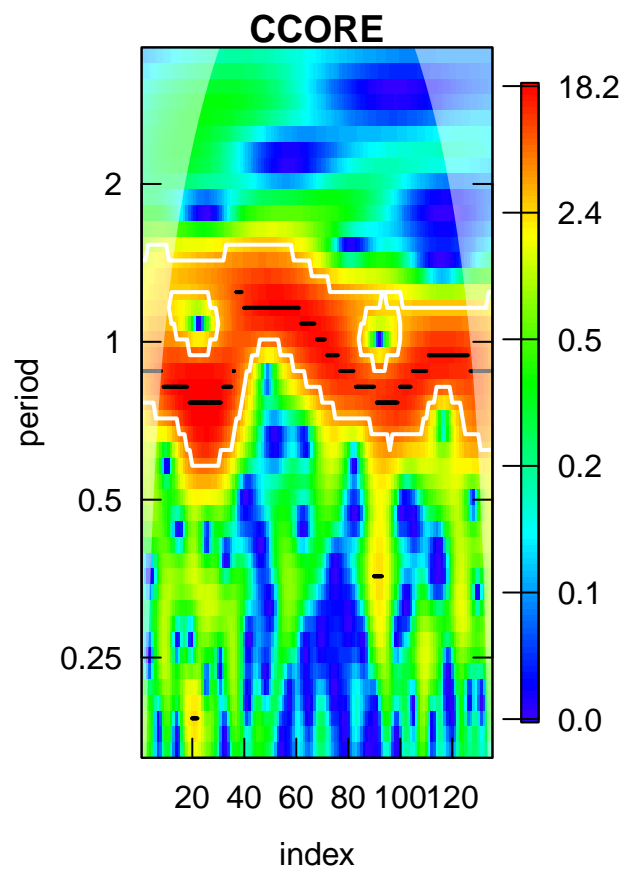


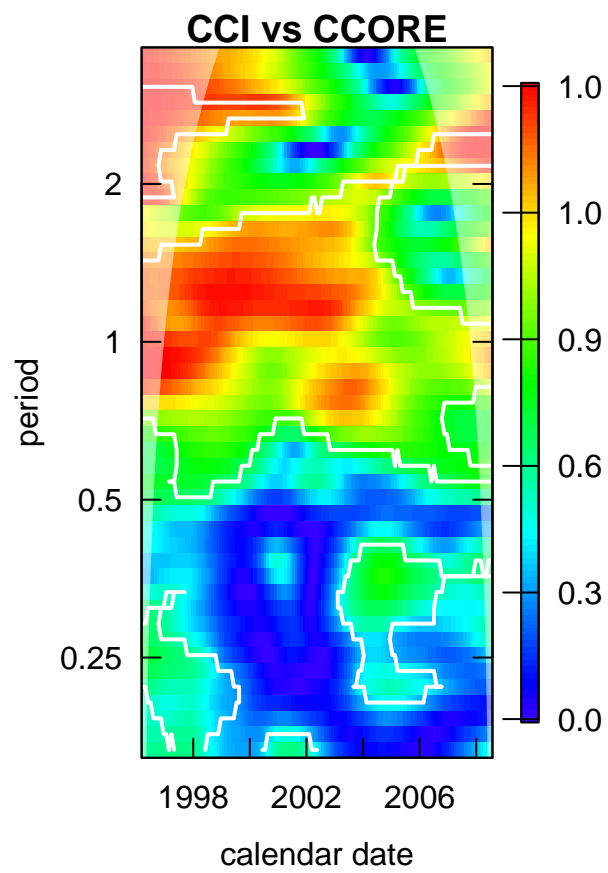
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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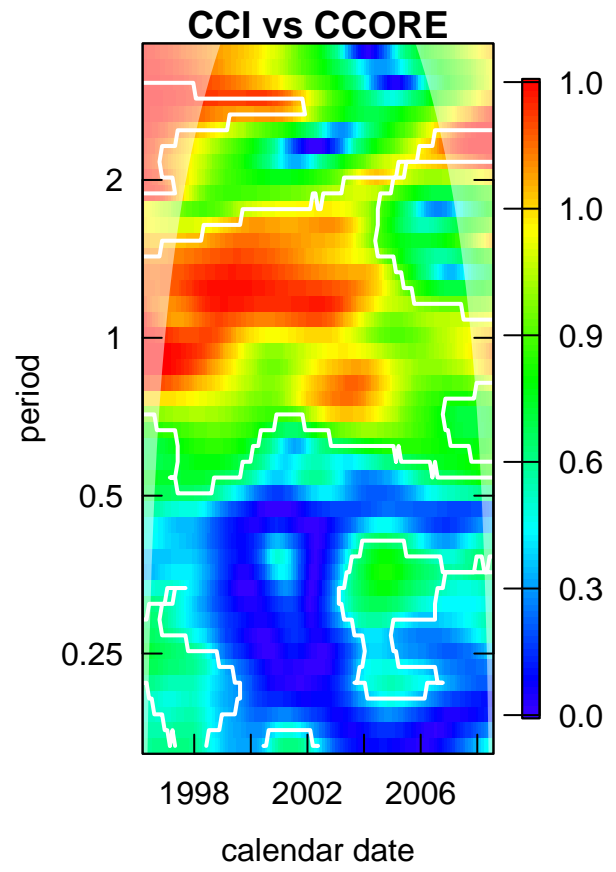
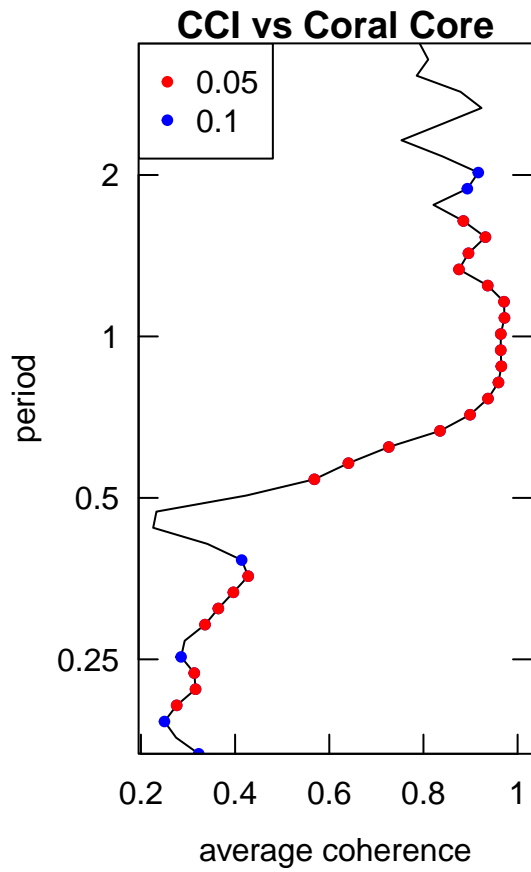
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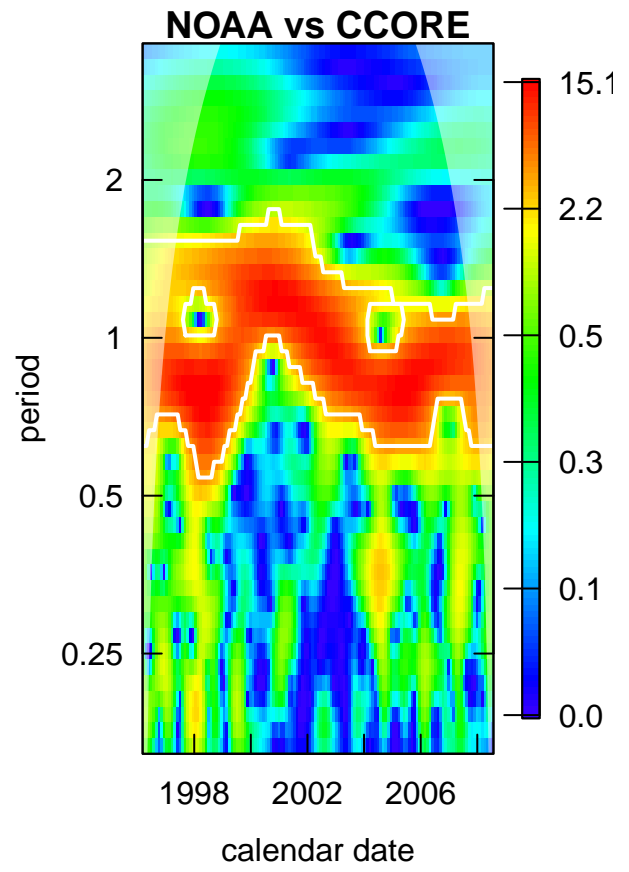
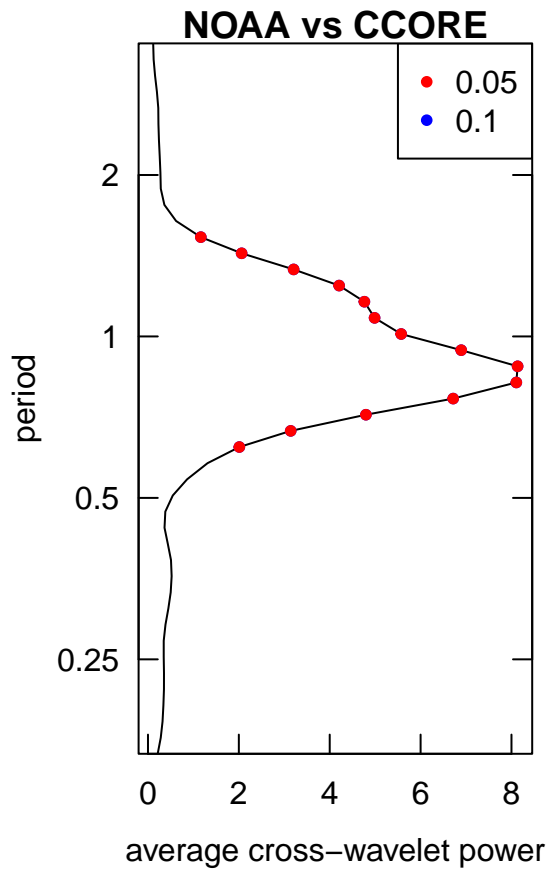


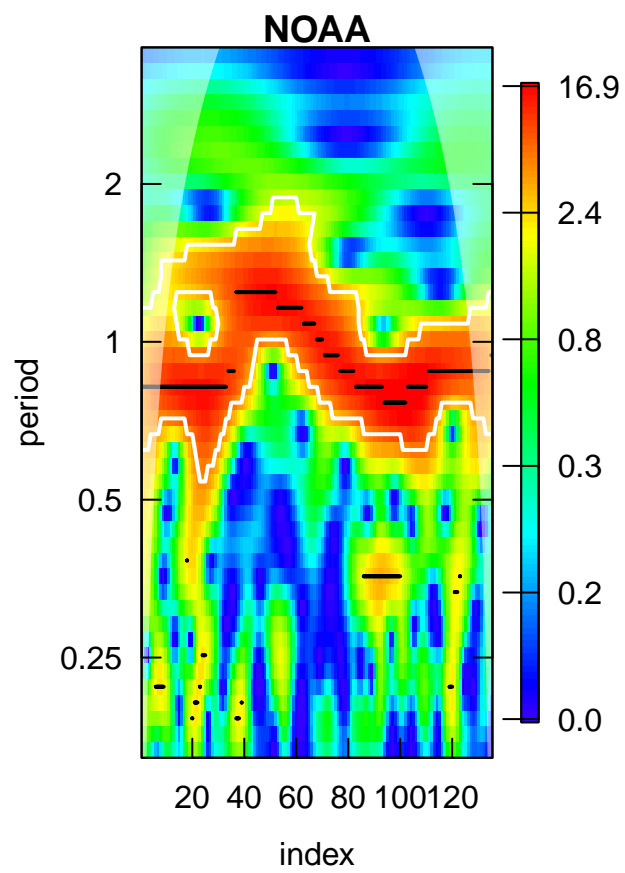


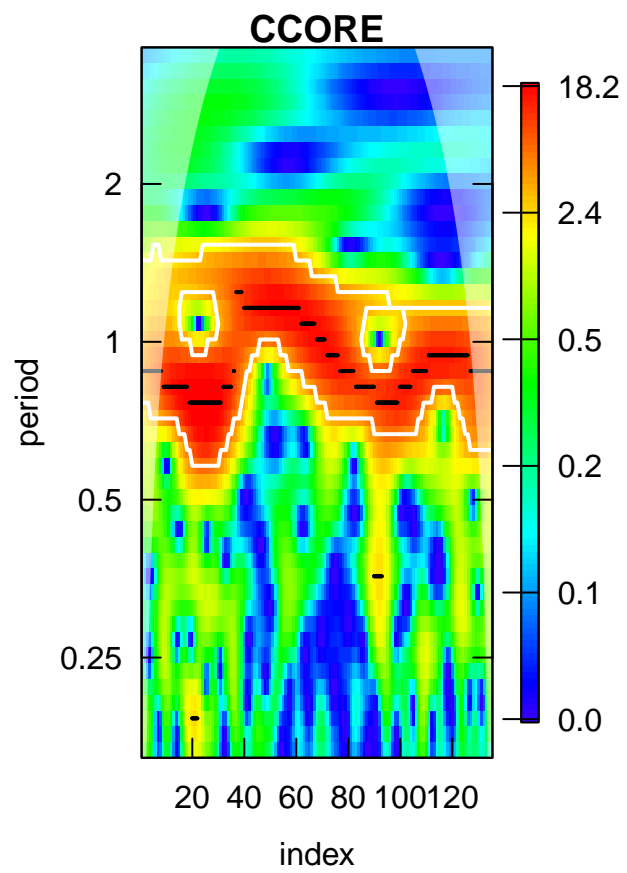


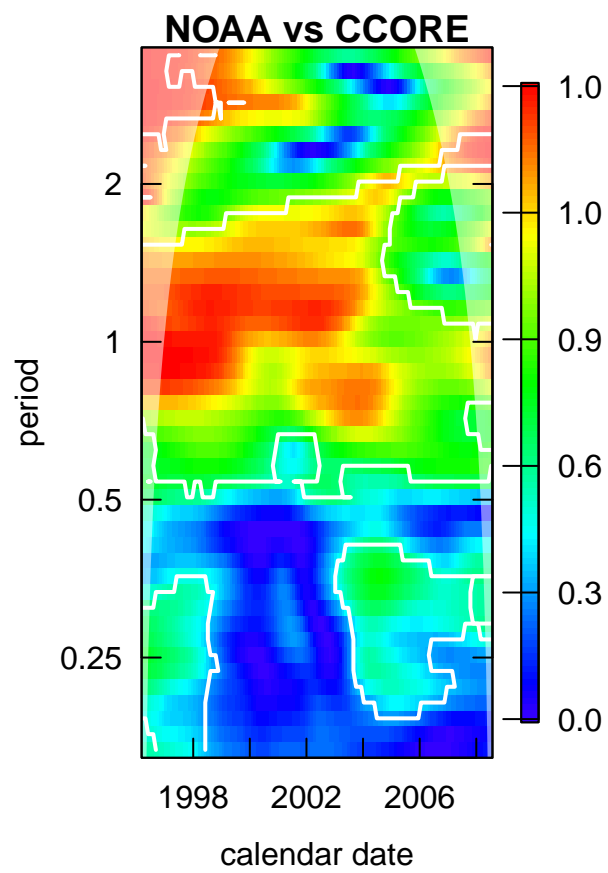
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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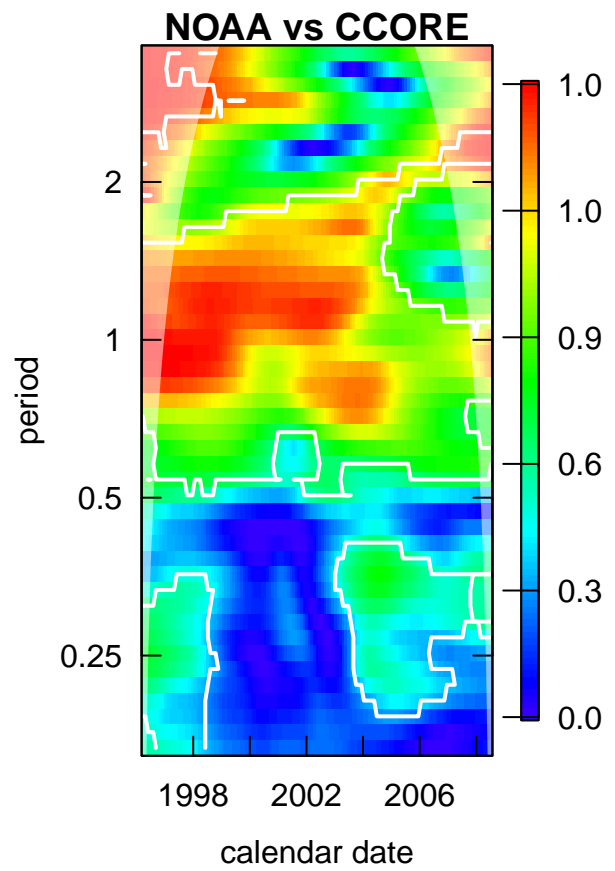
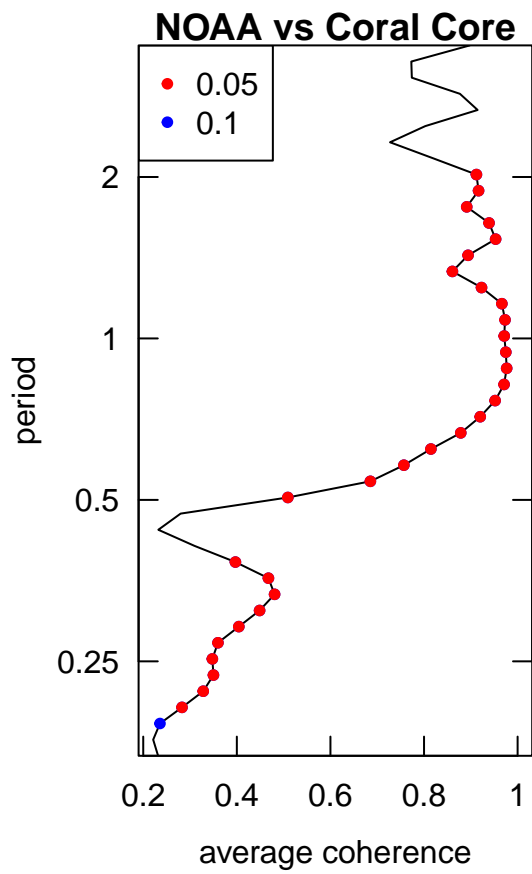
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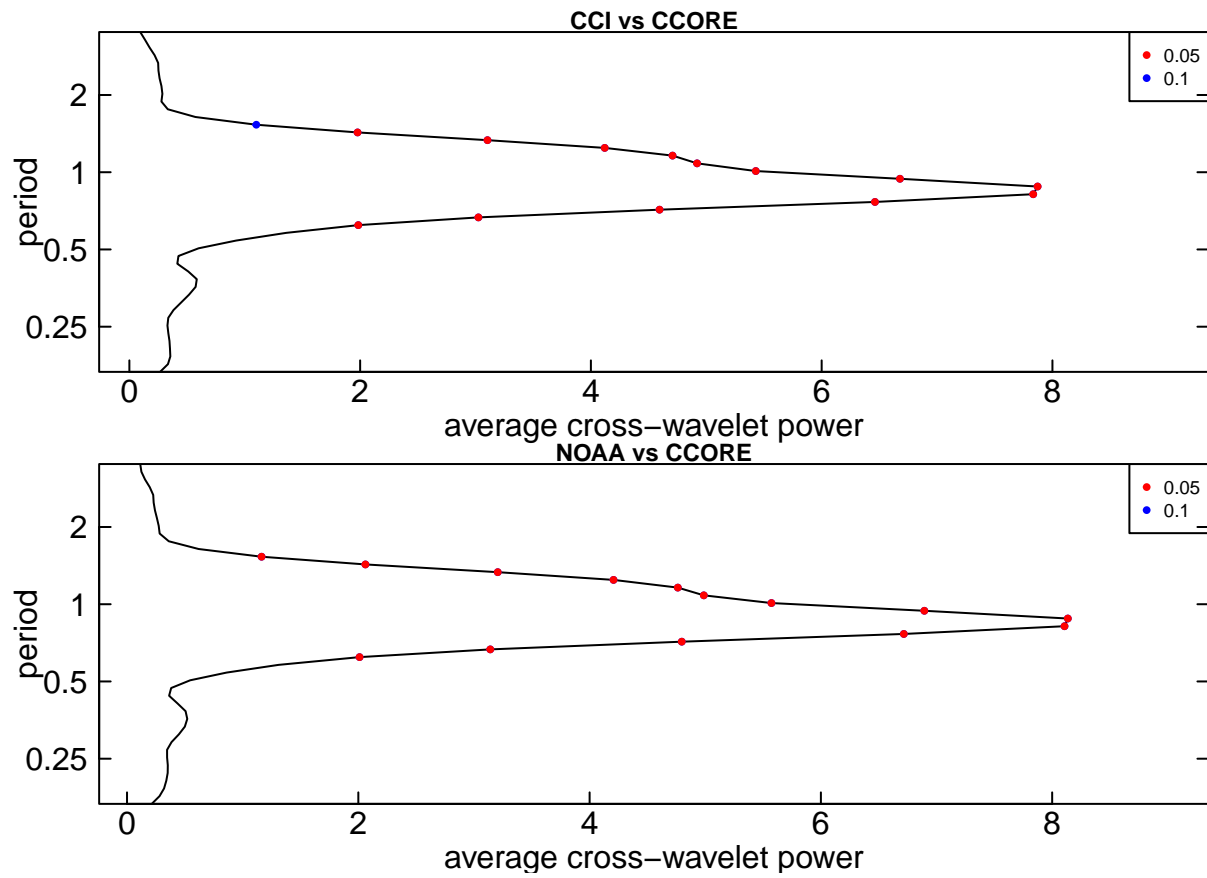


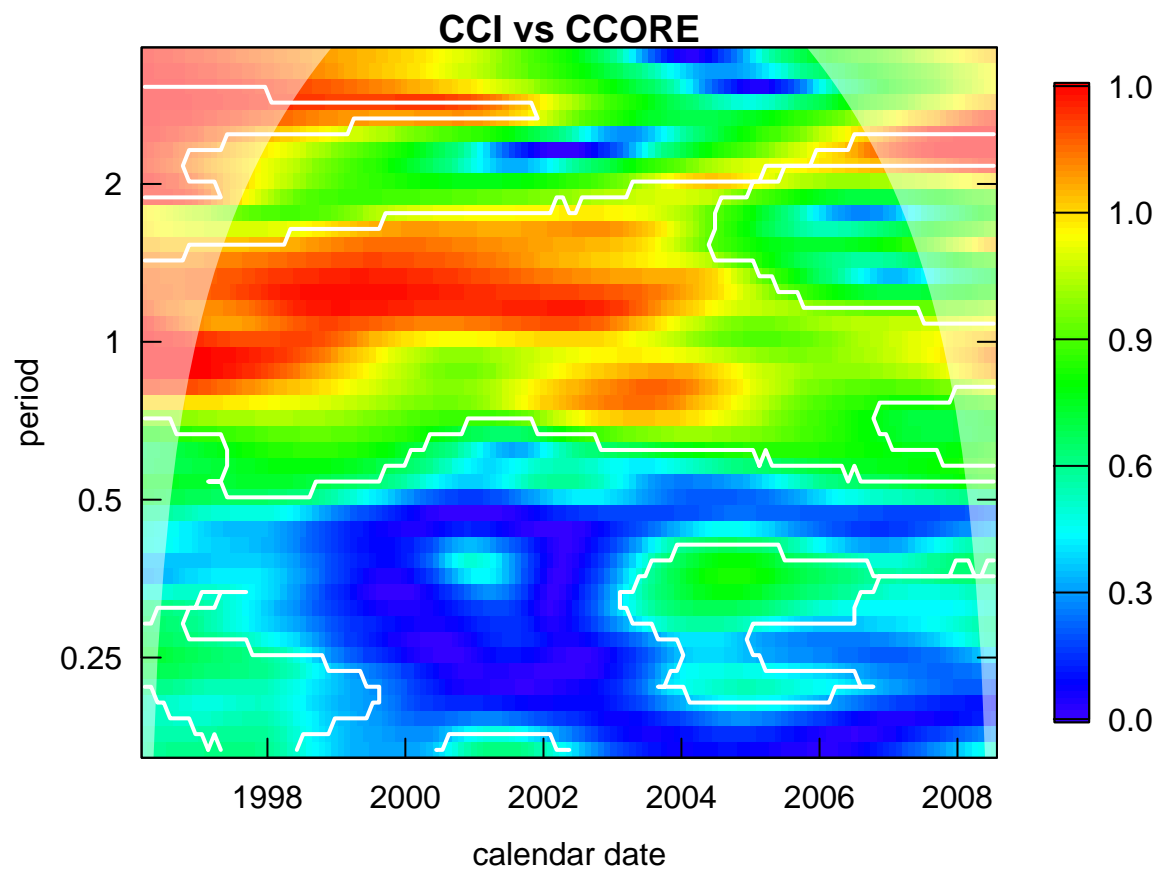


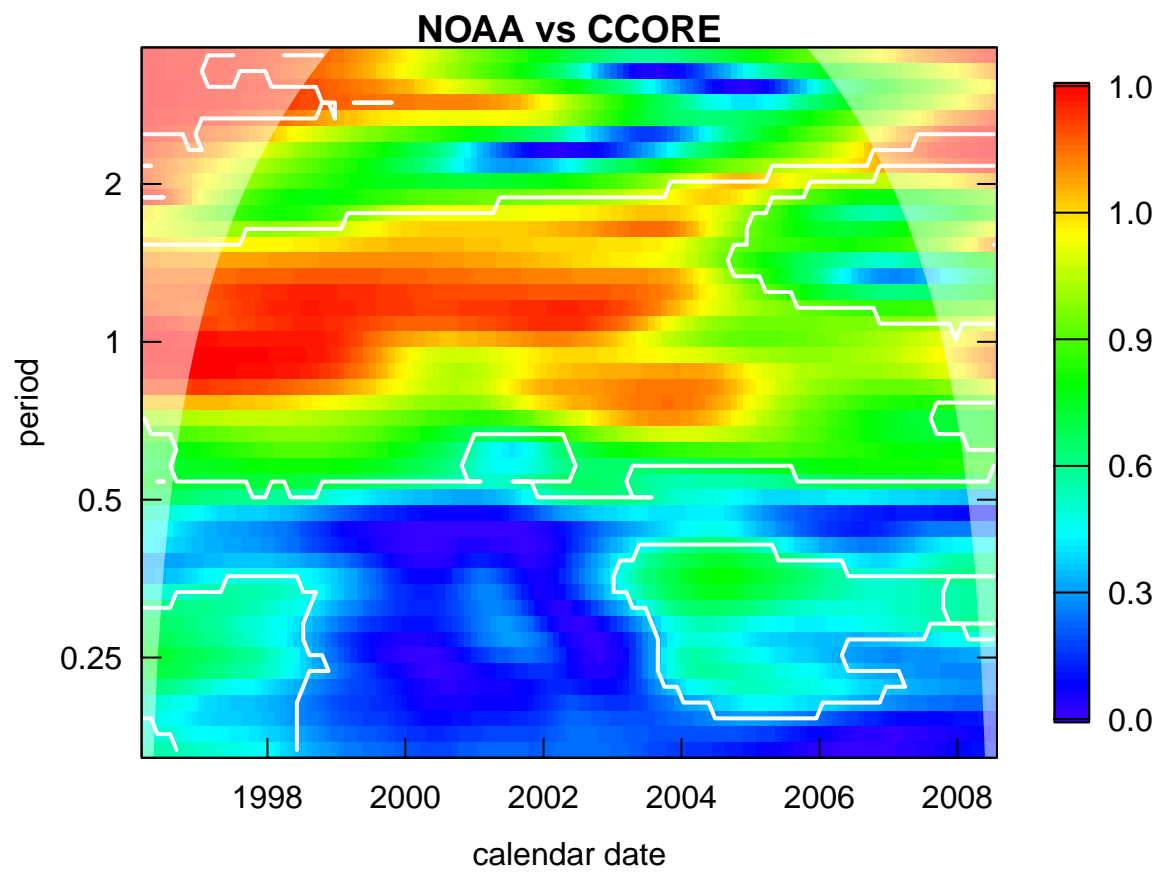








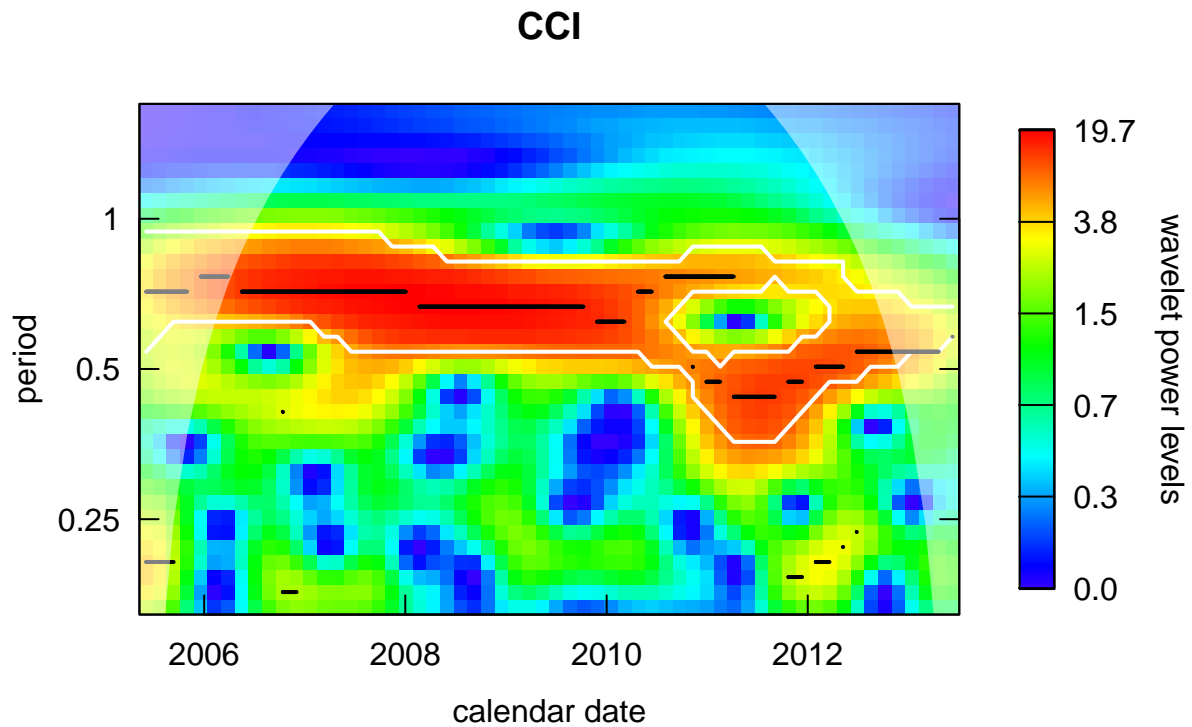


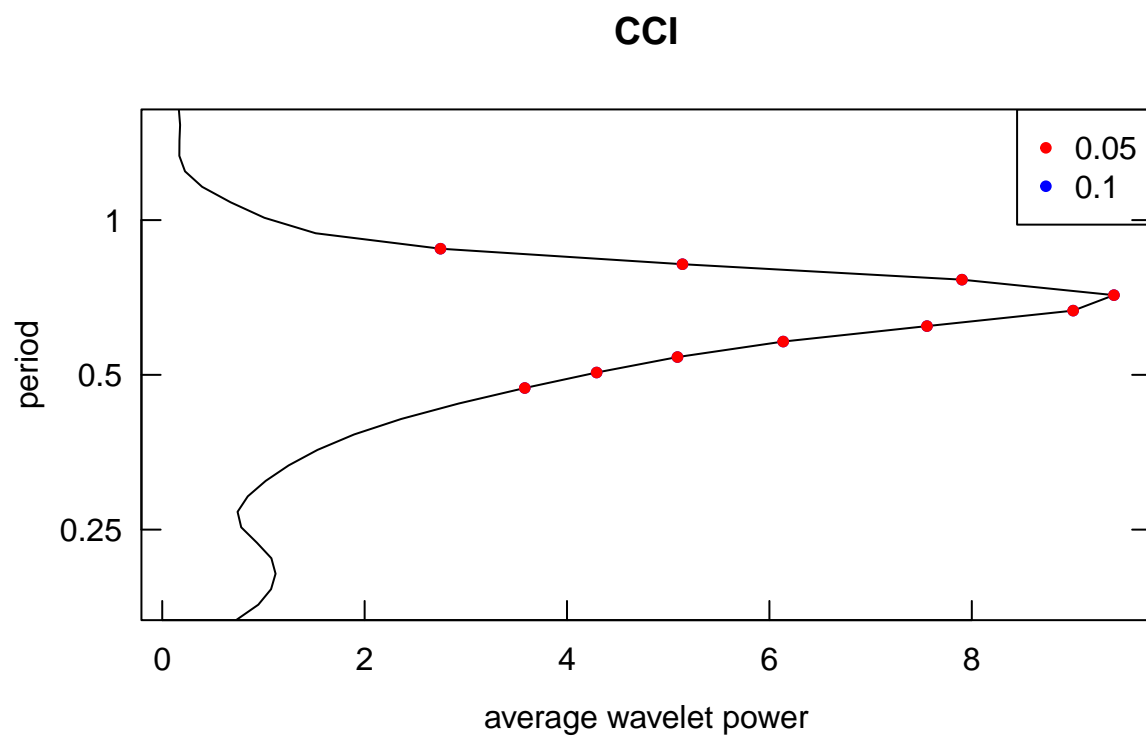


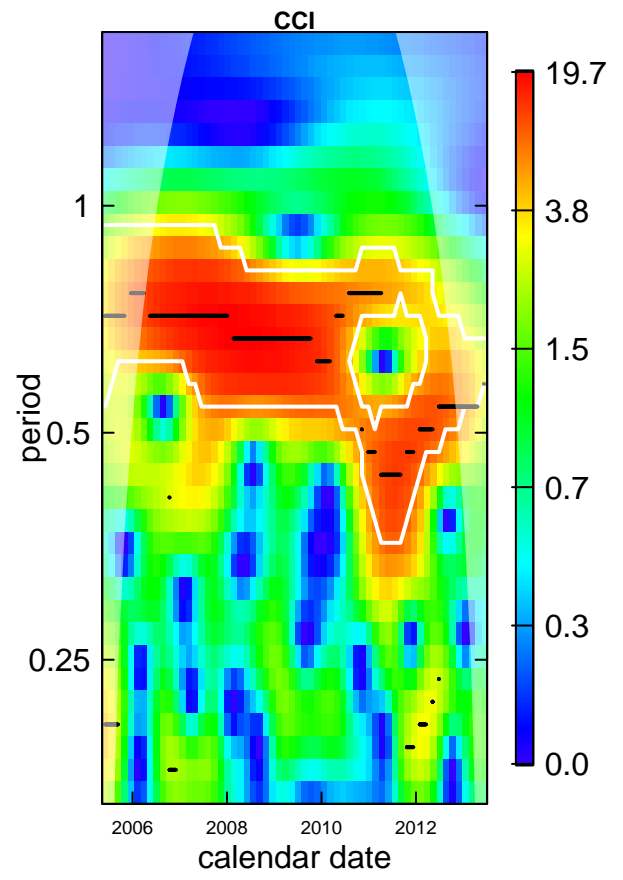
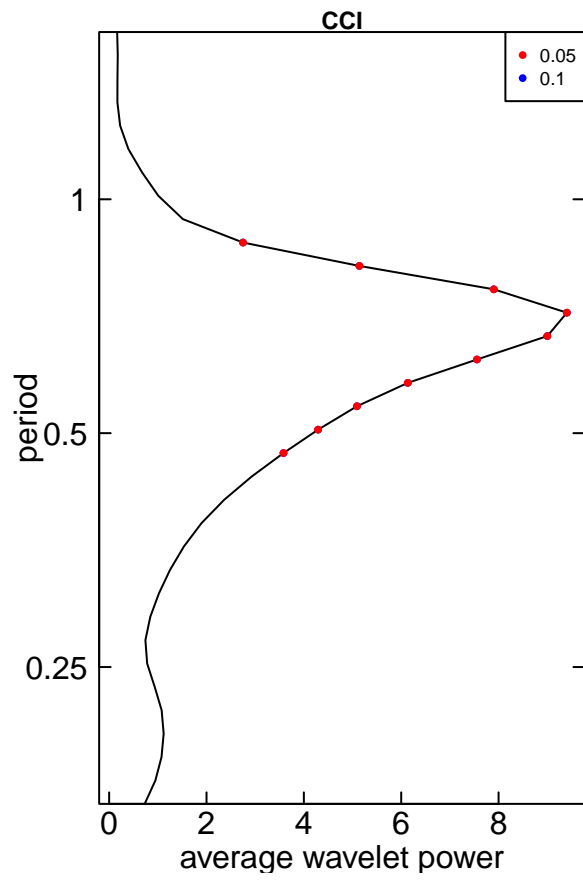
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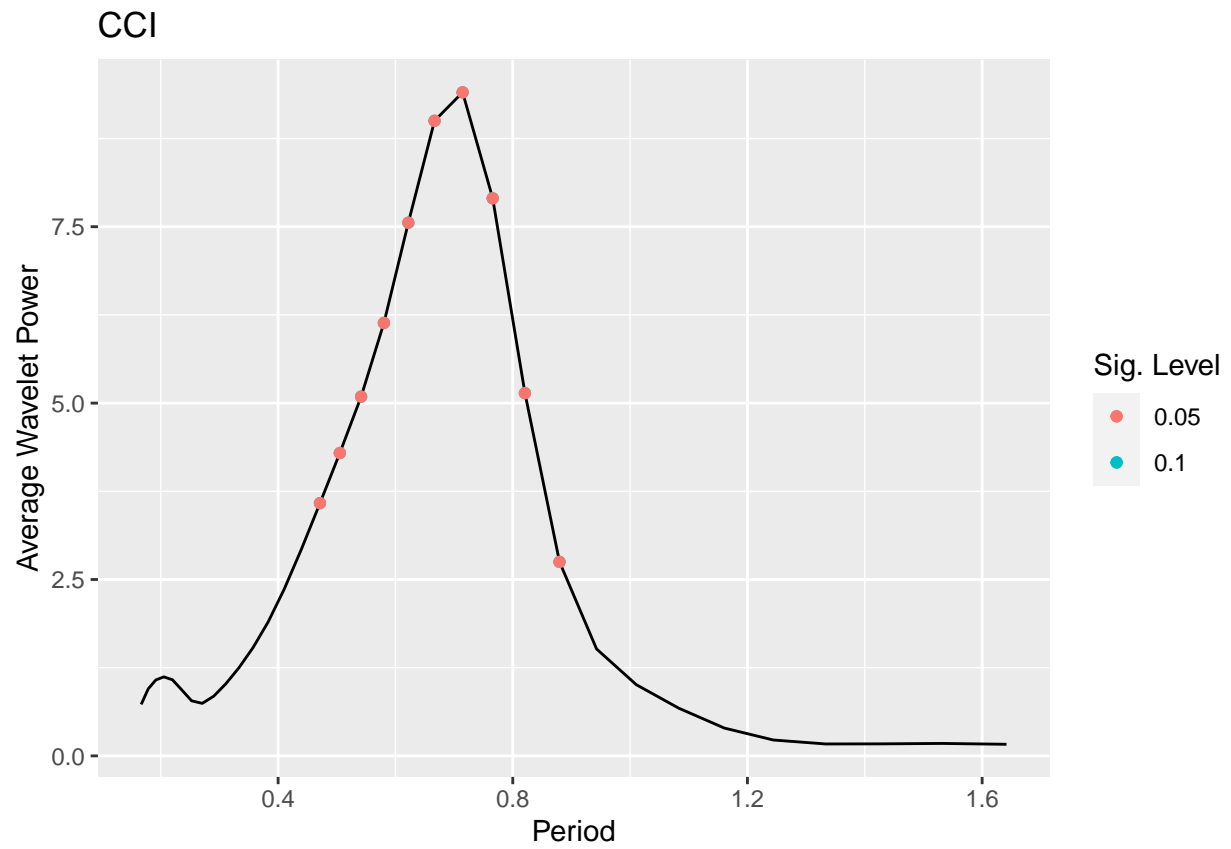
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
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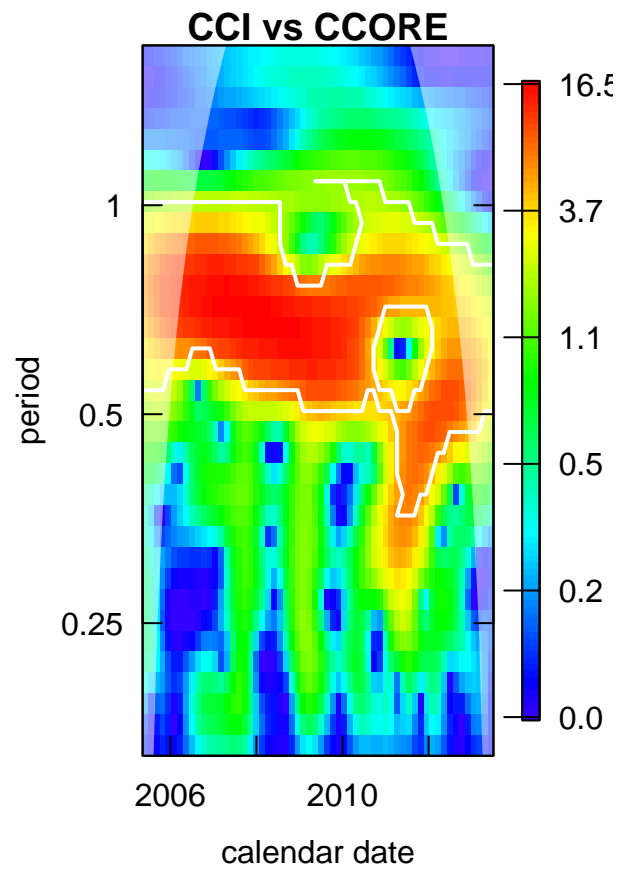
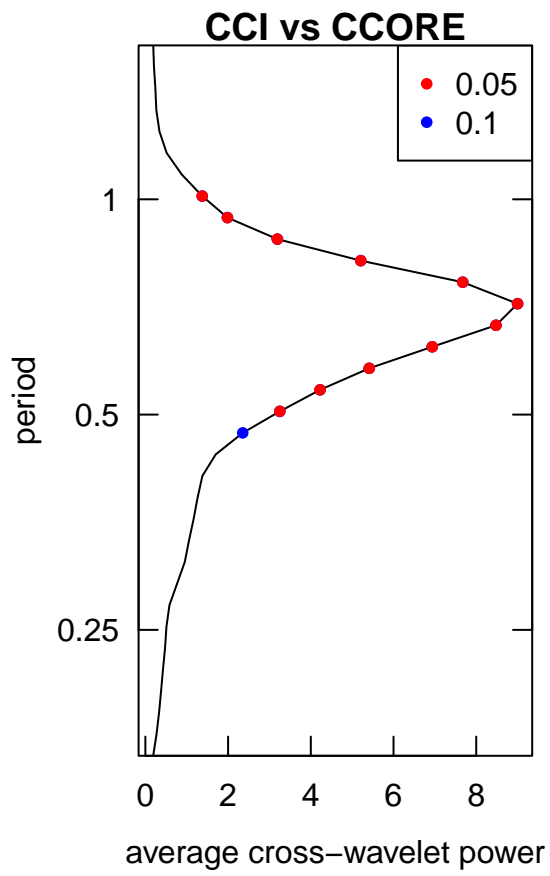


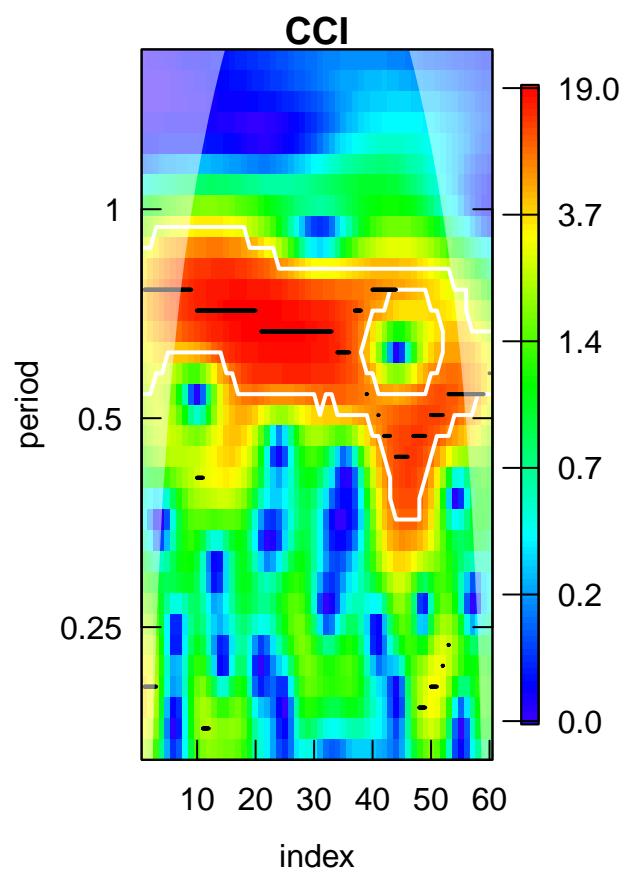


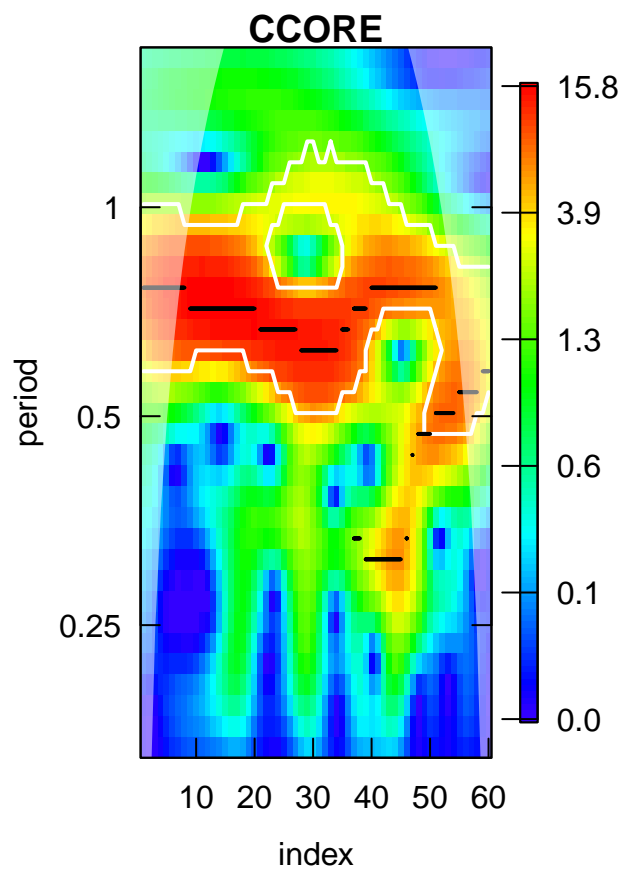


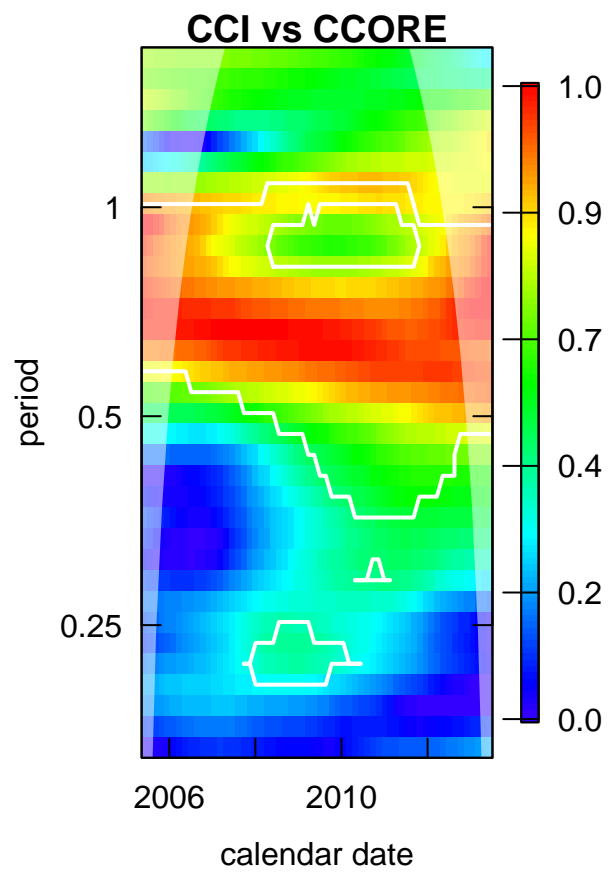
```
## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
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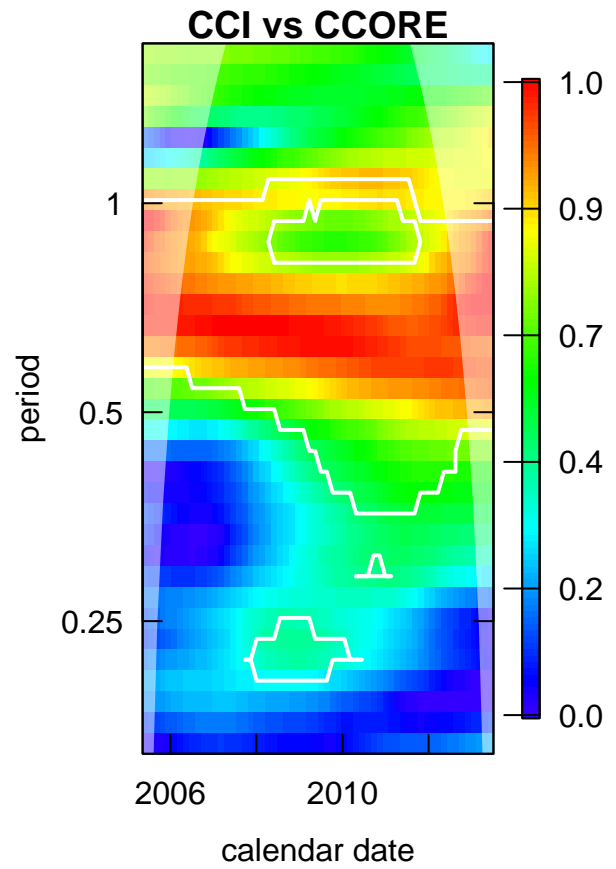
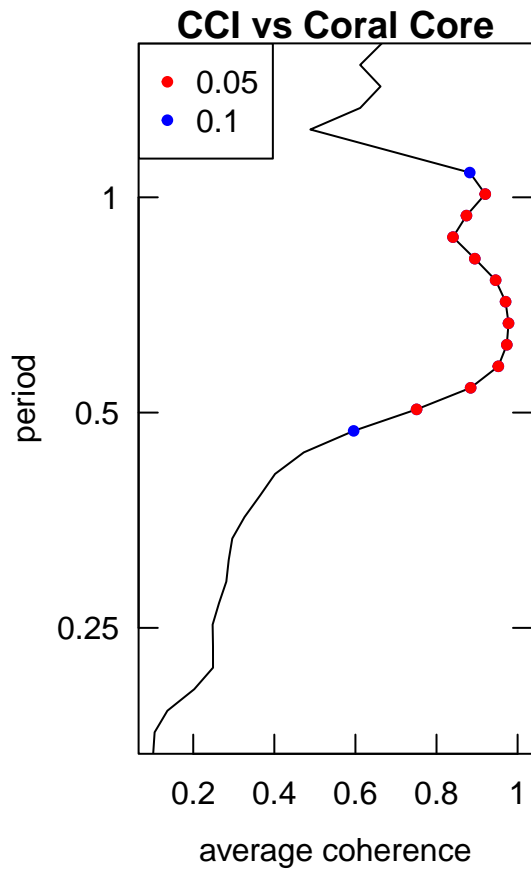
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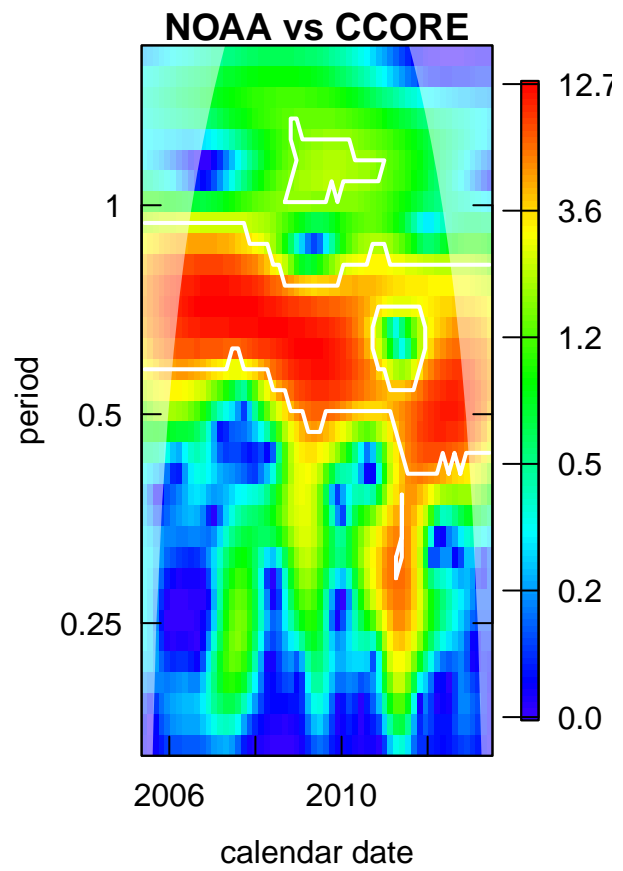
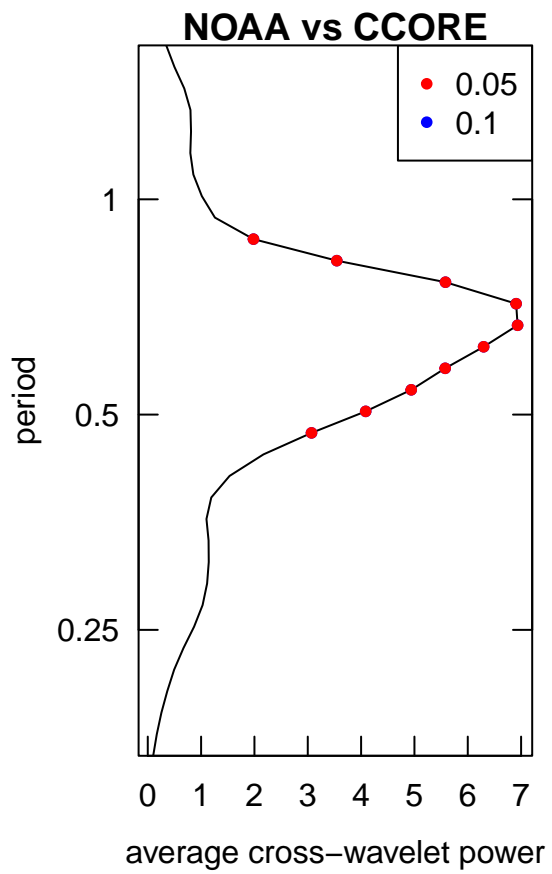


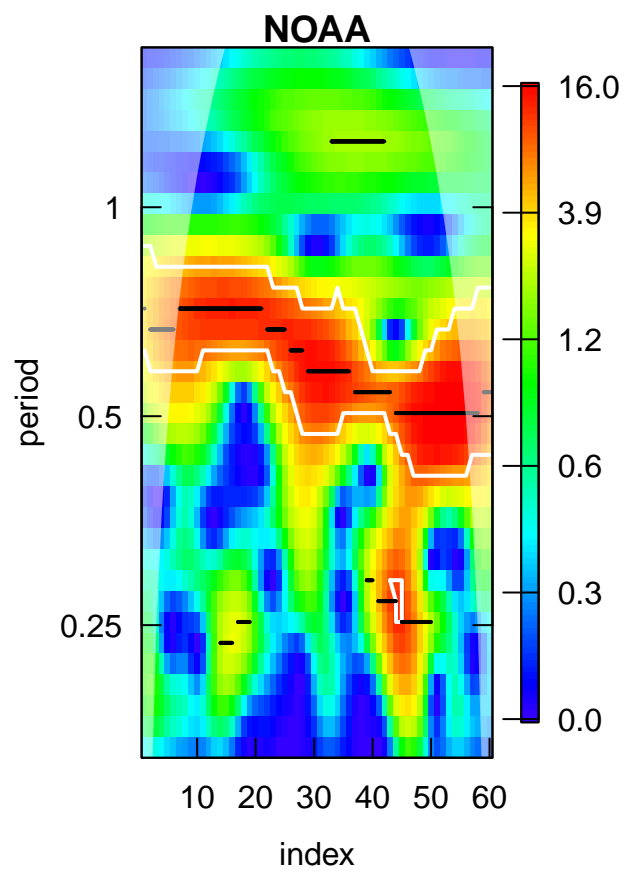


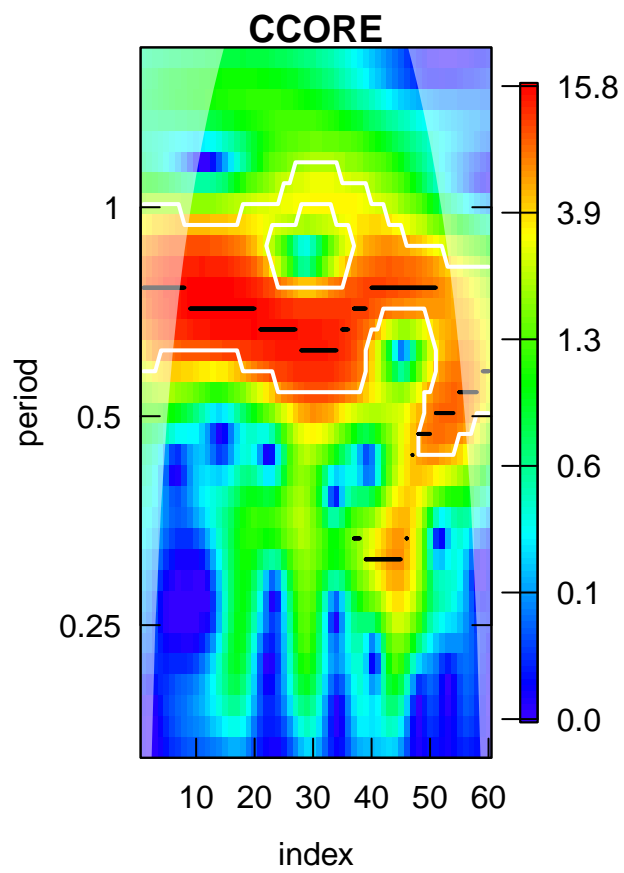


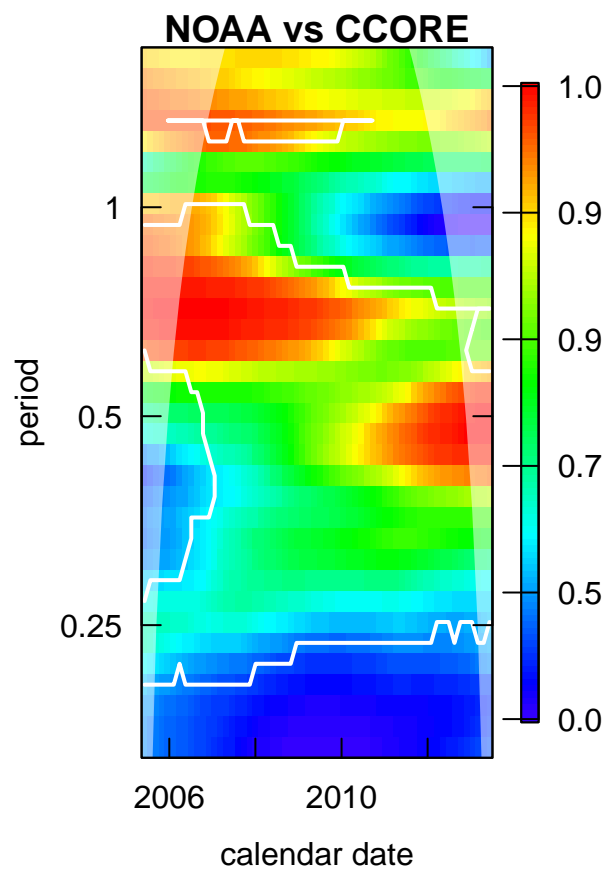
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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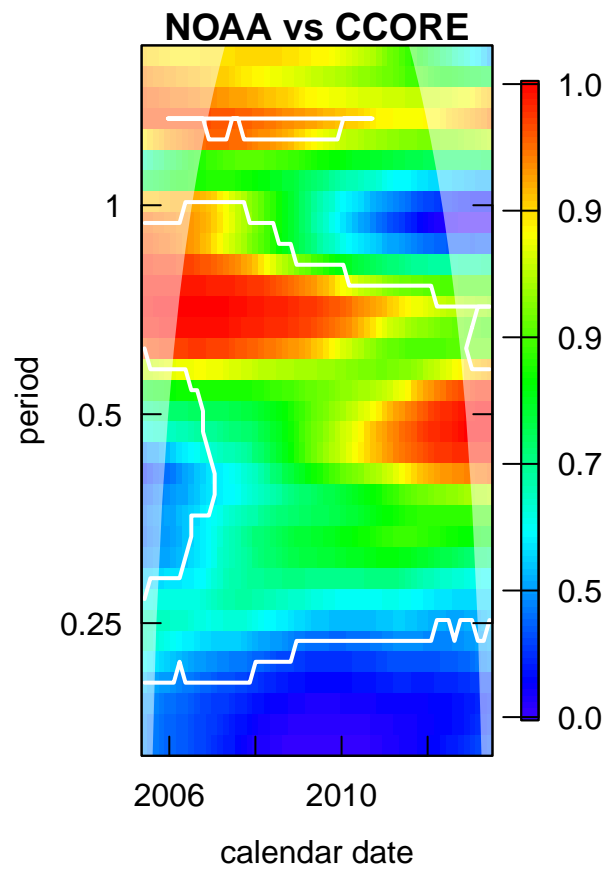
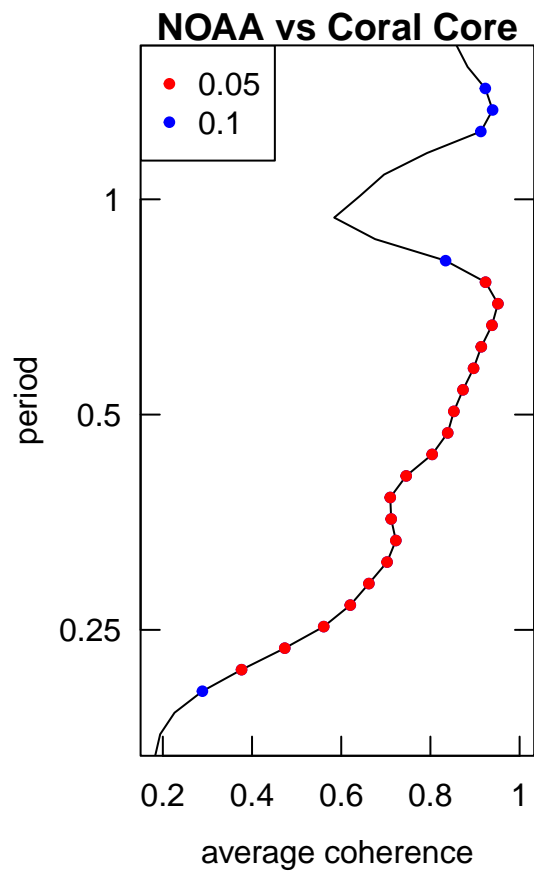
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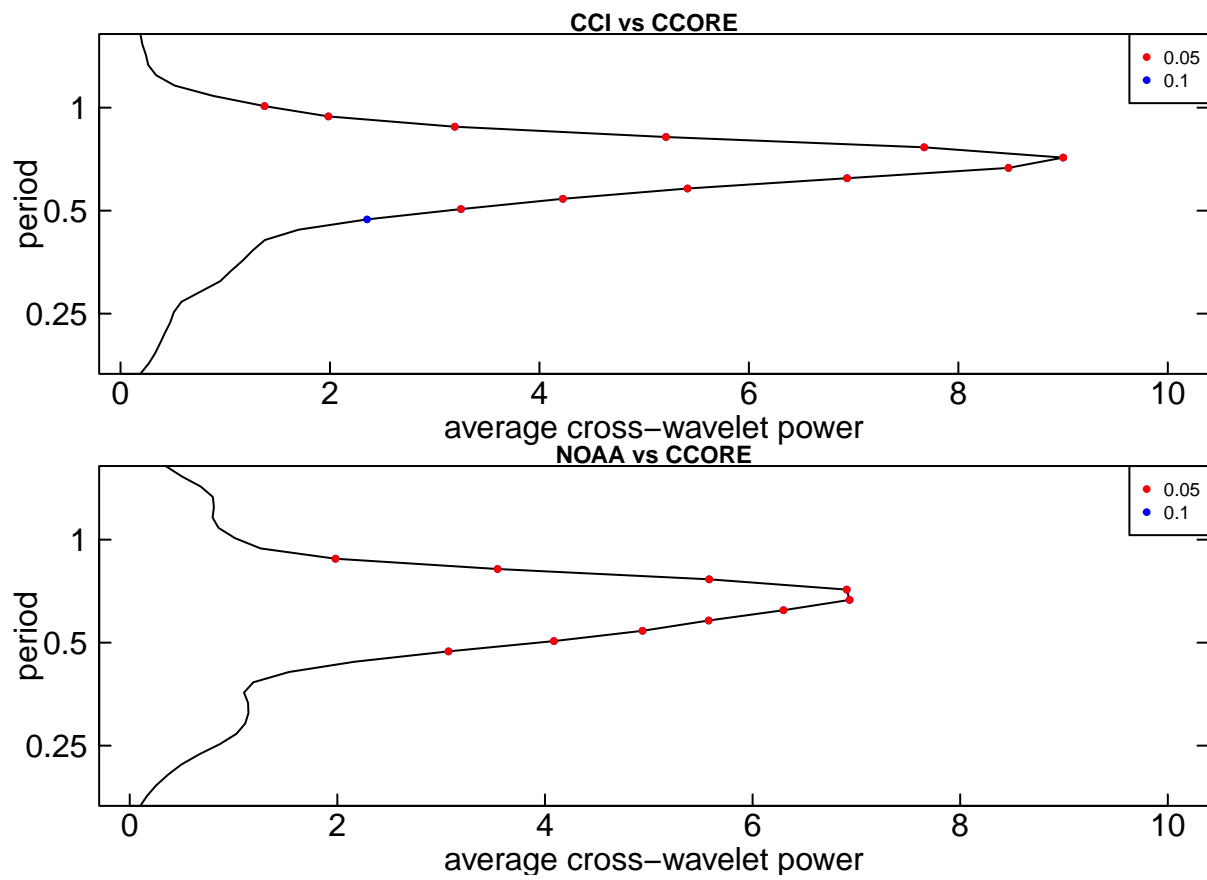


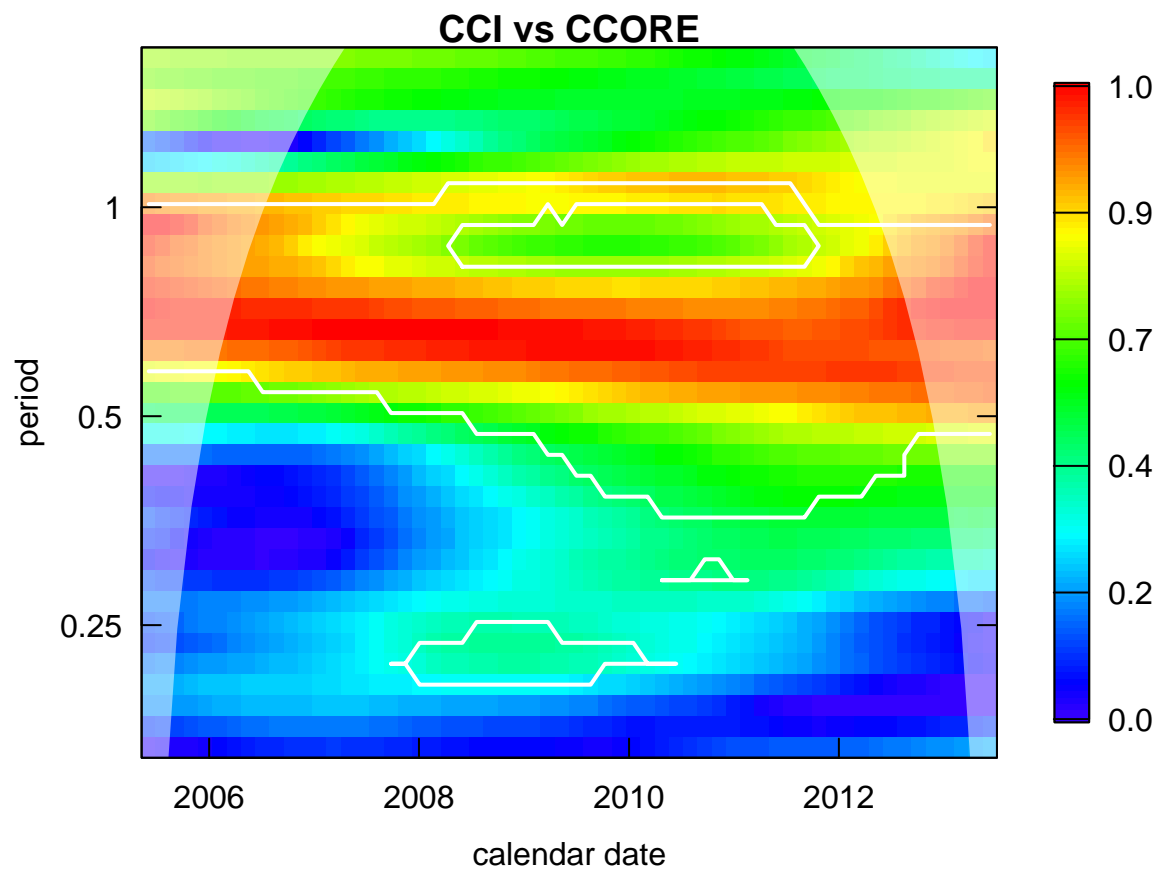


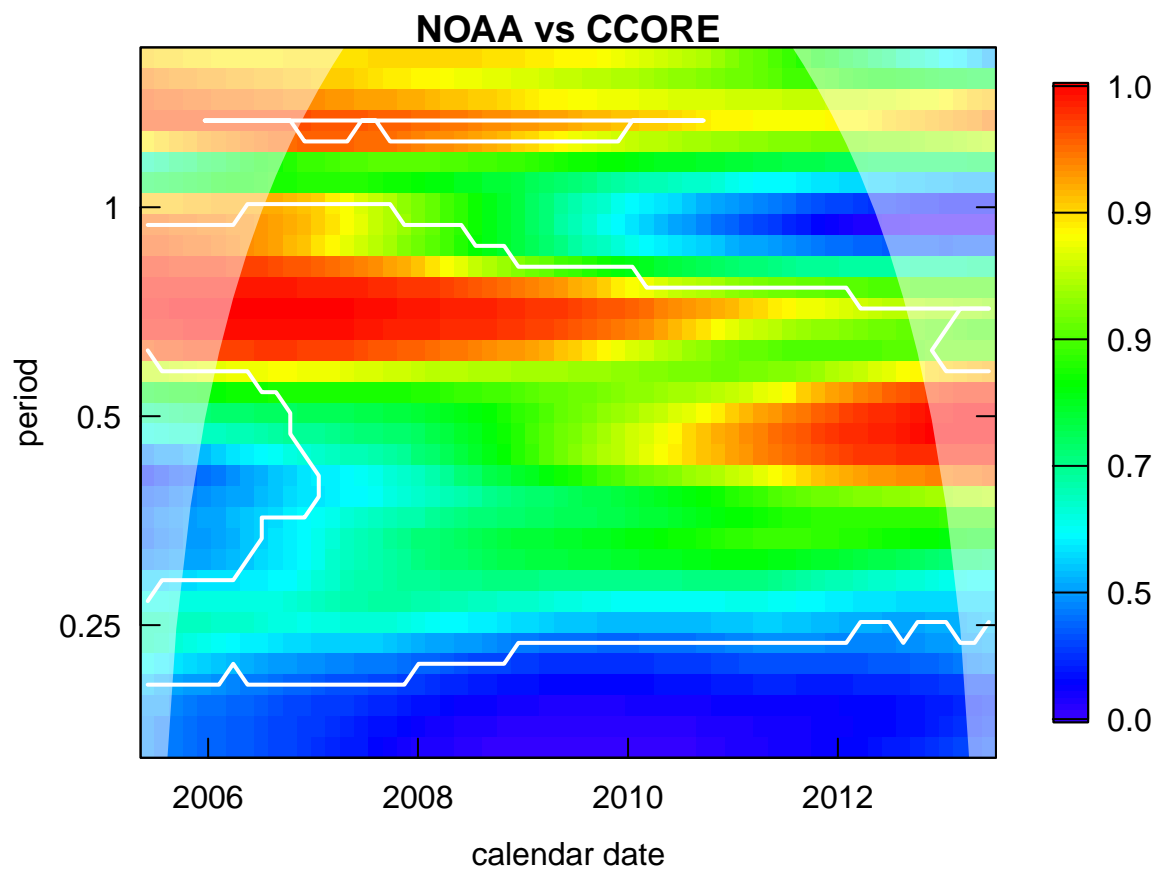








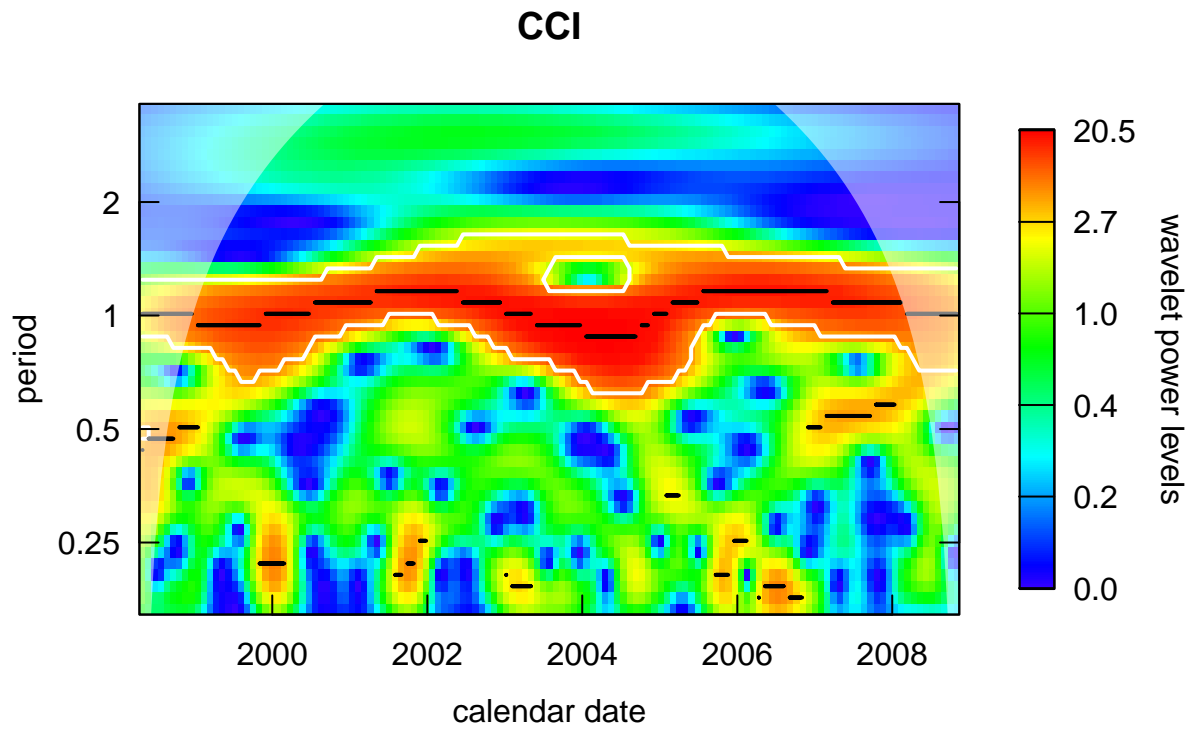


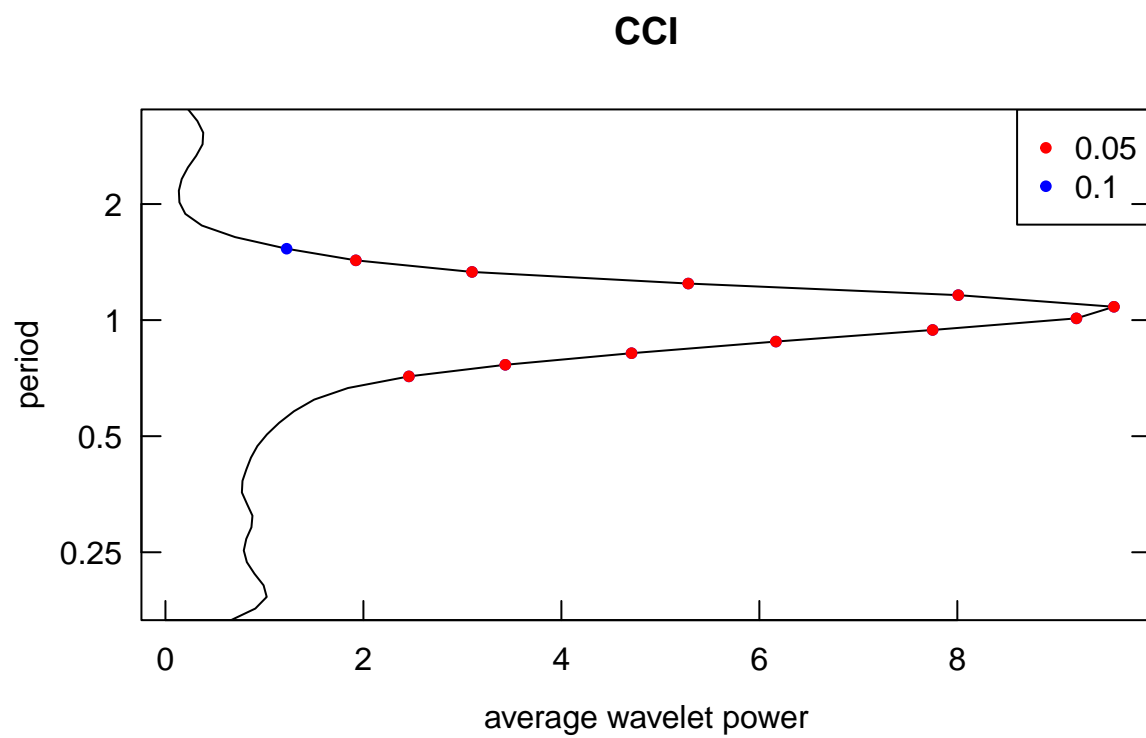


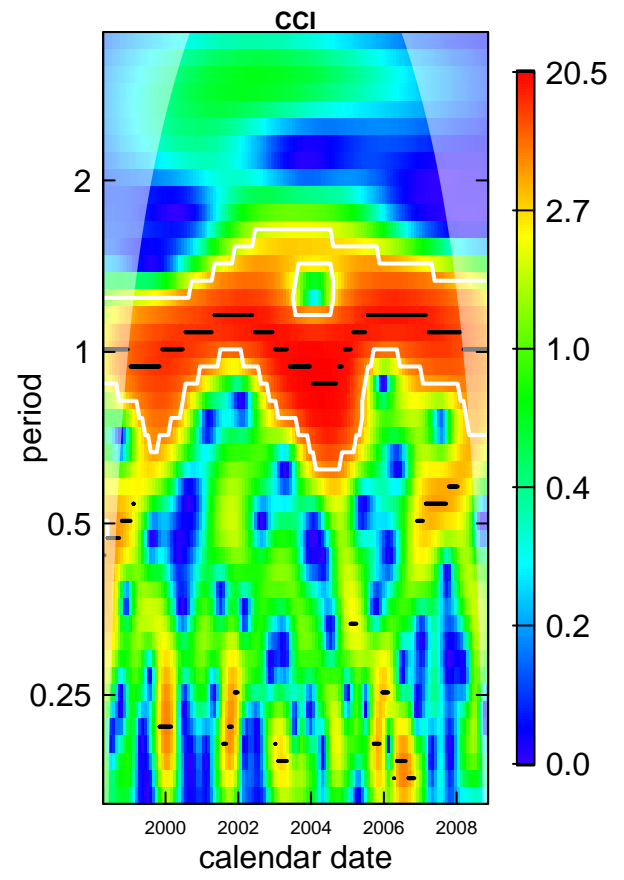
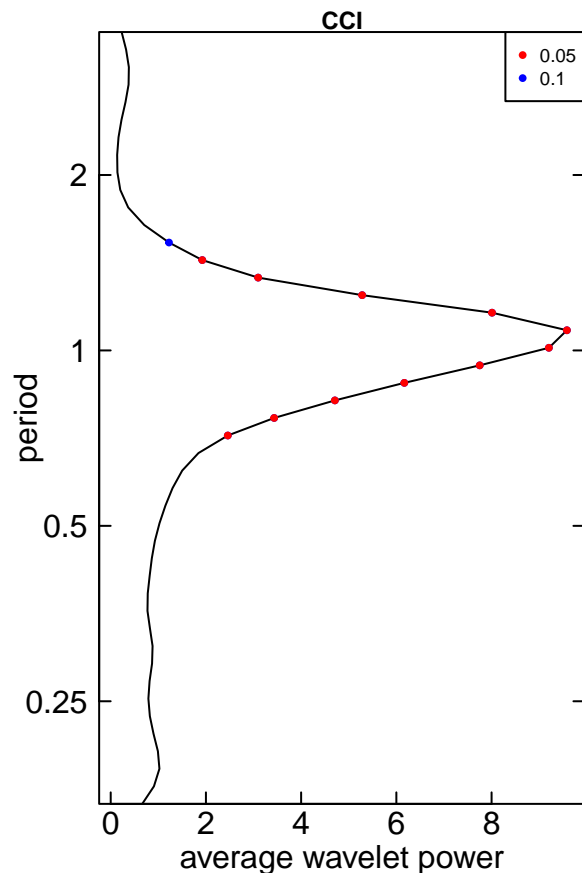
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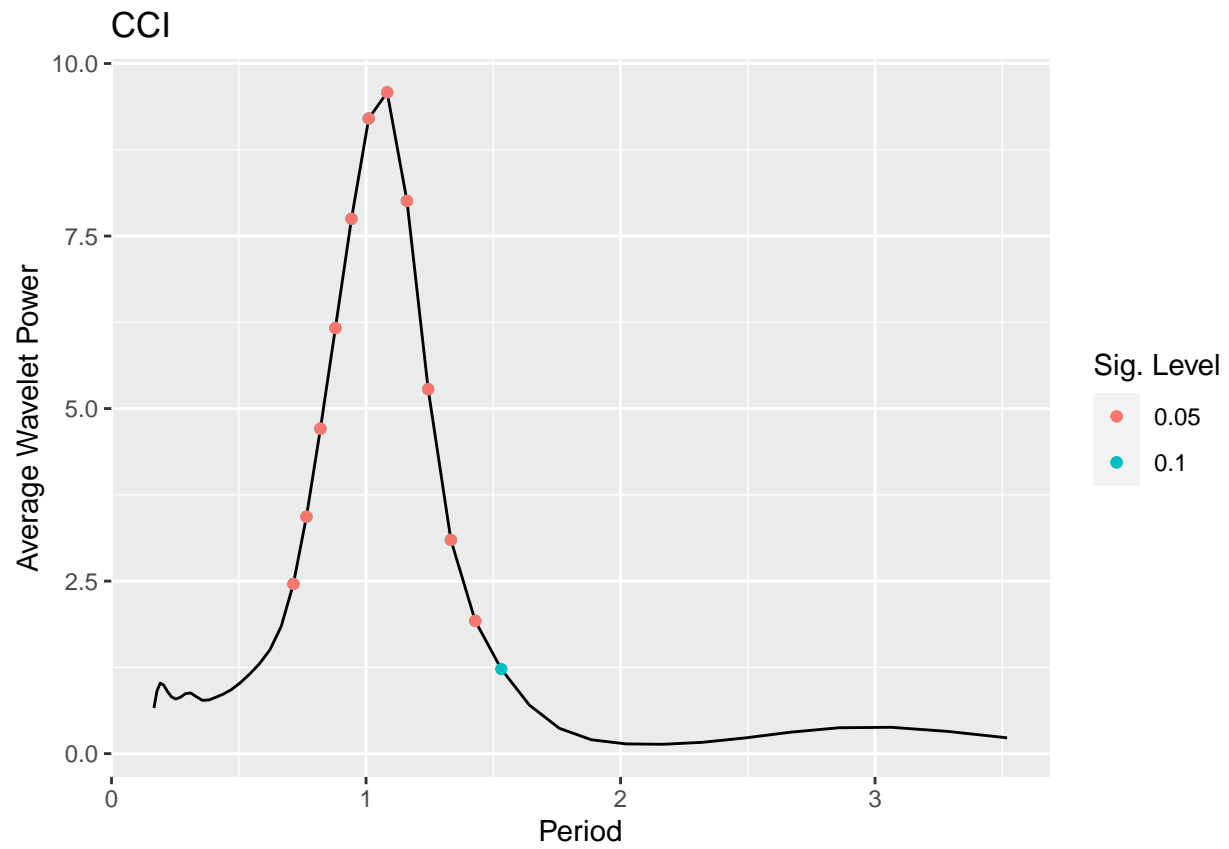
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
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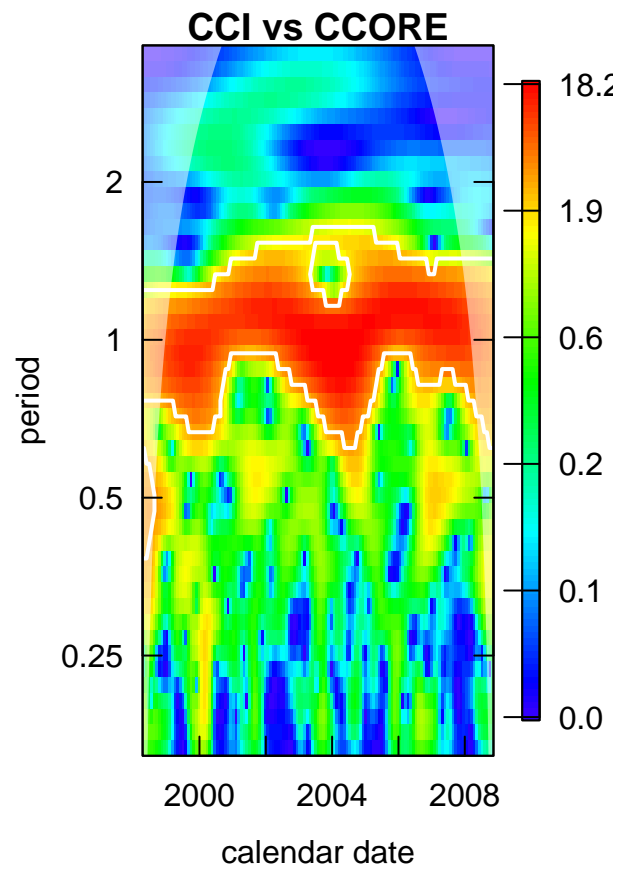
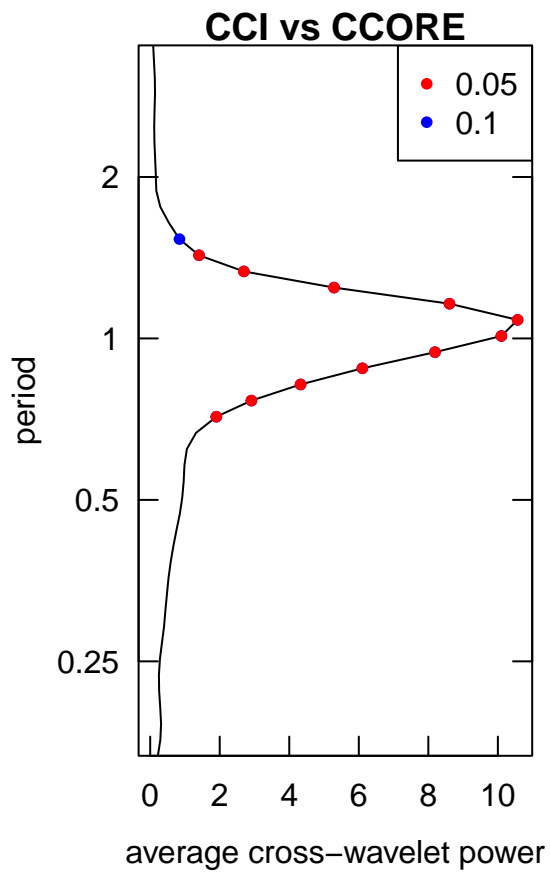


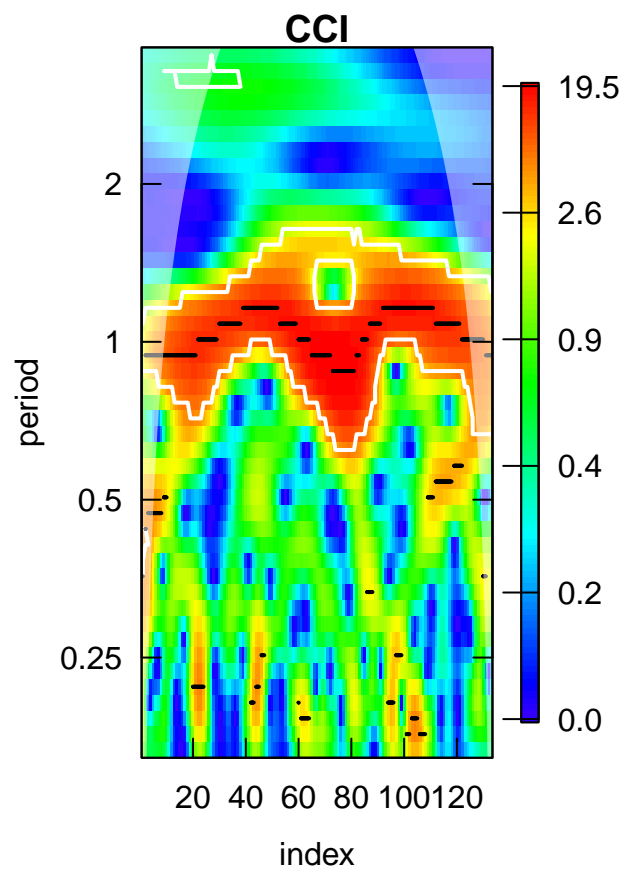


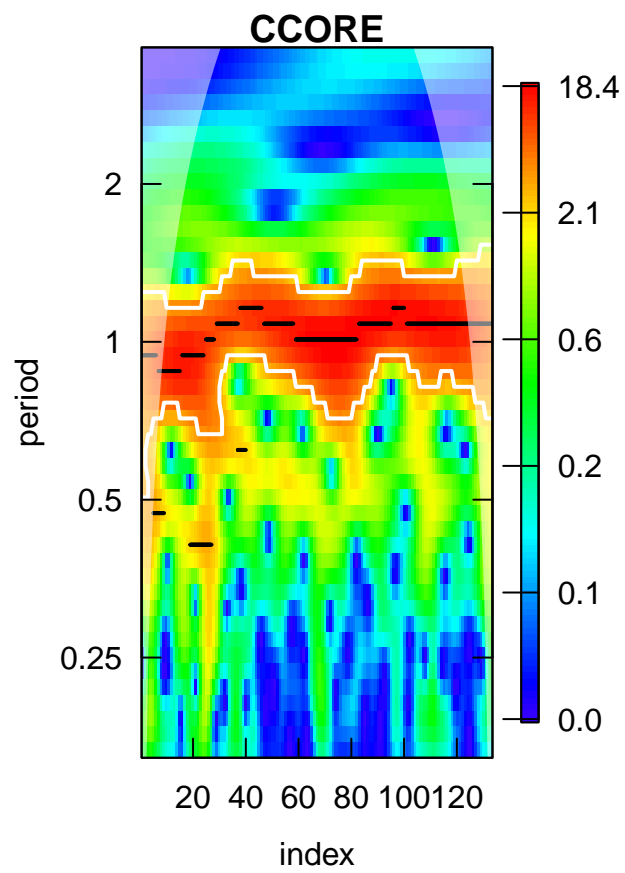


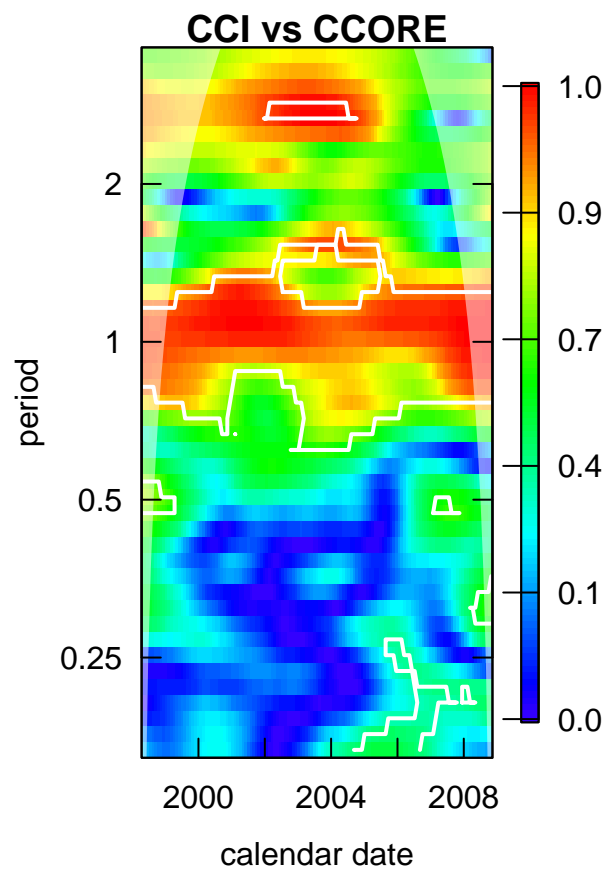
```
## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
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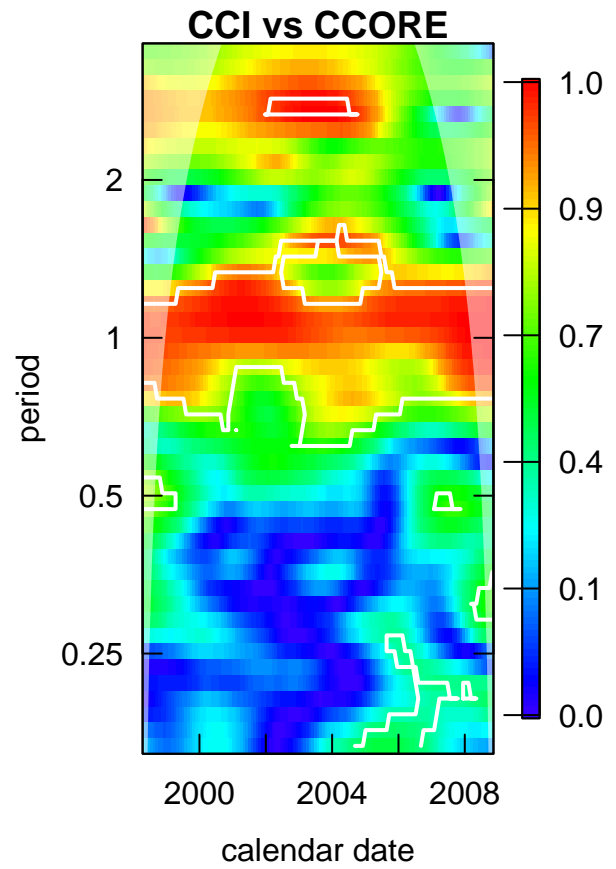
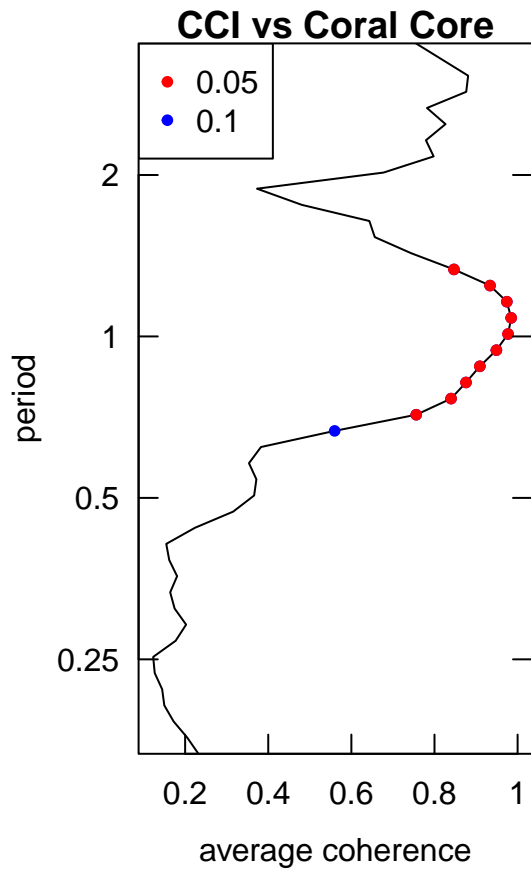
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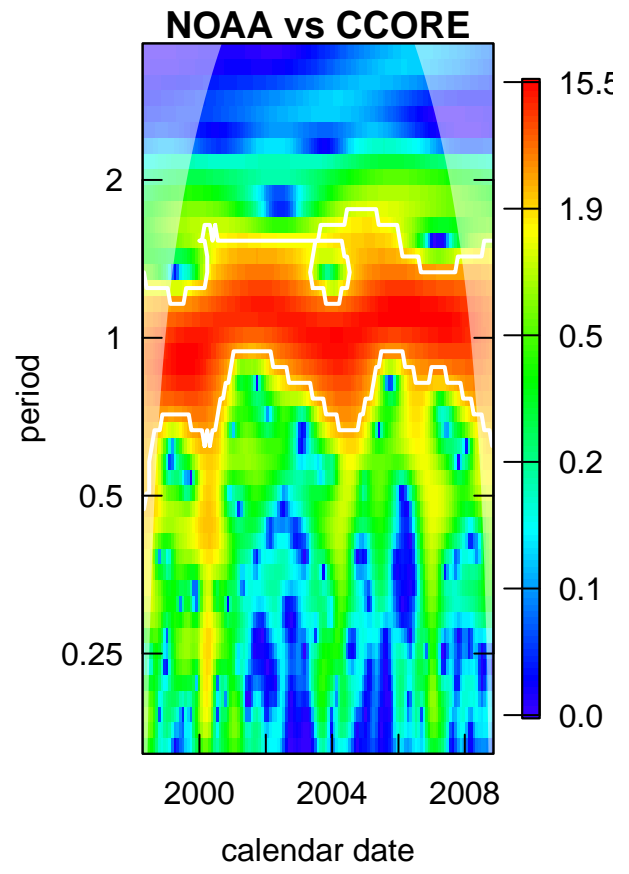
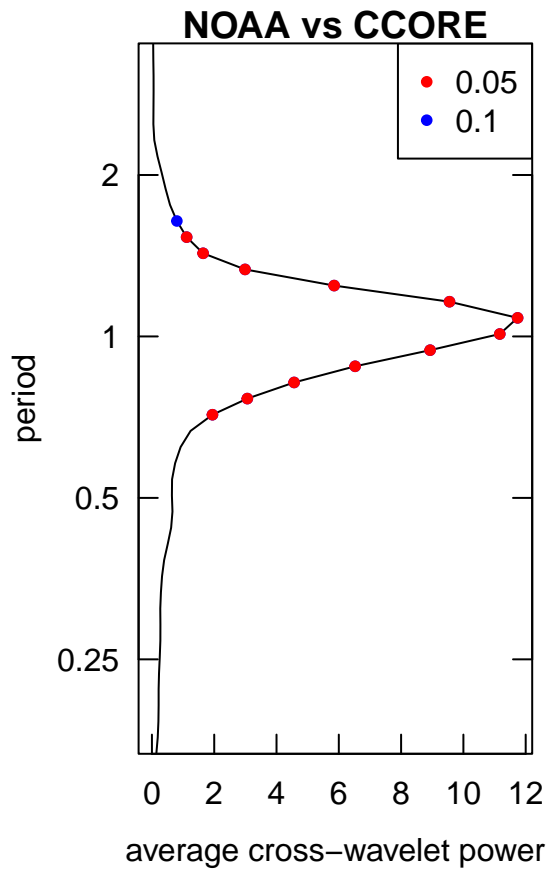


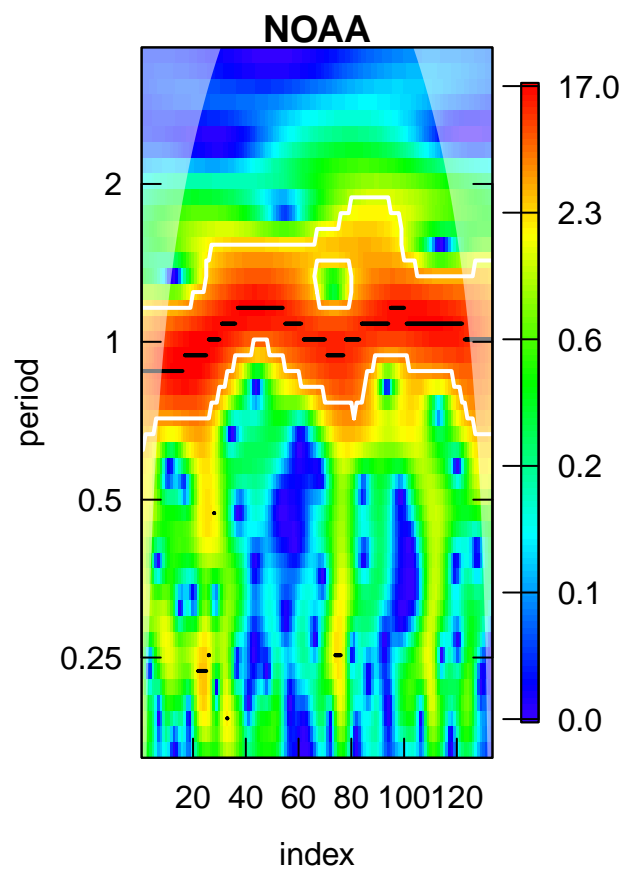


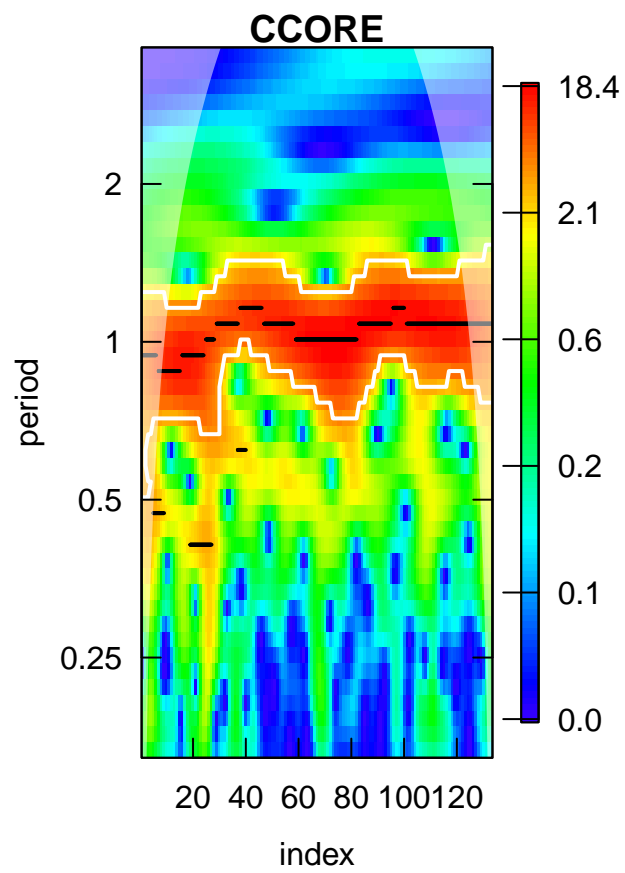


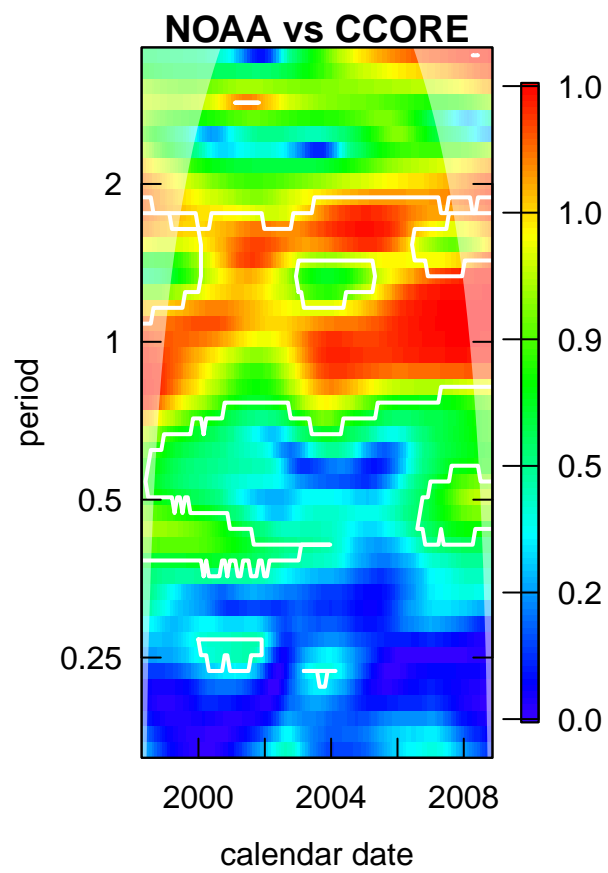
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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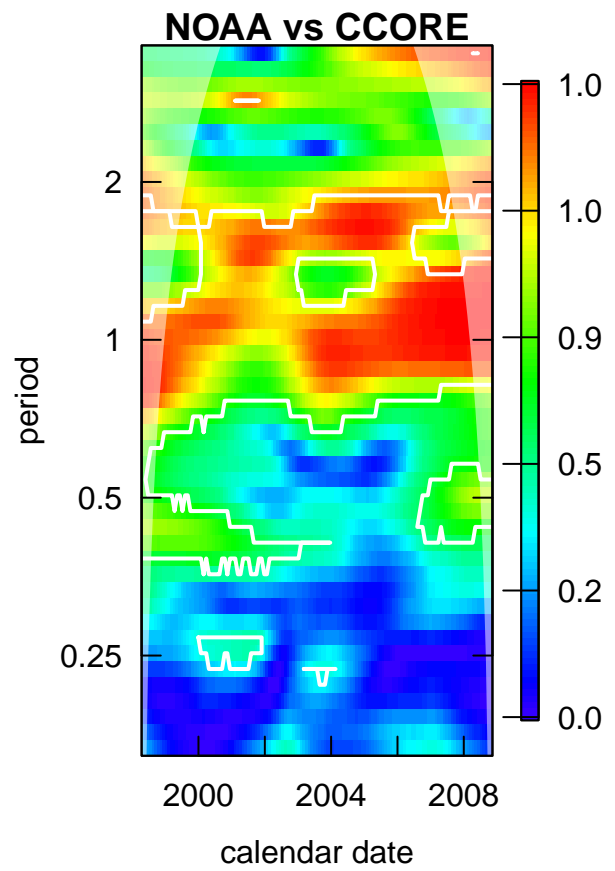
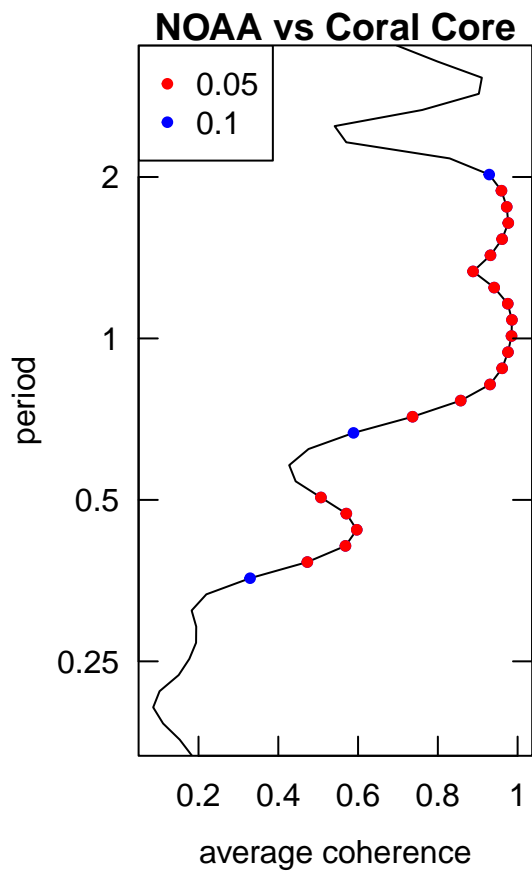
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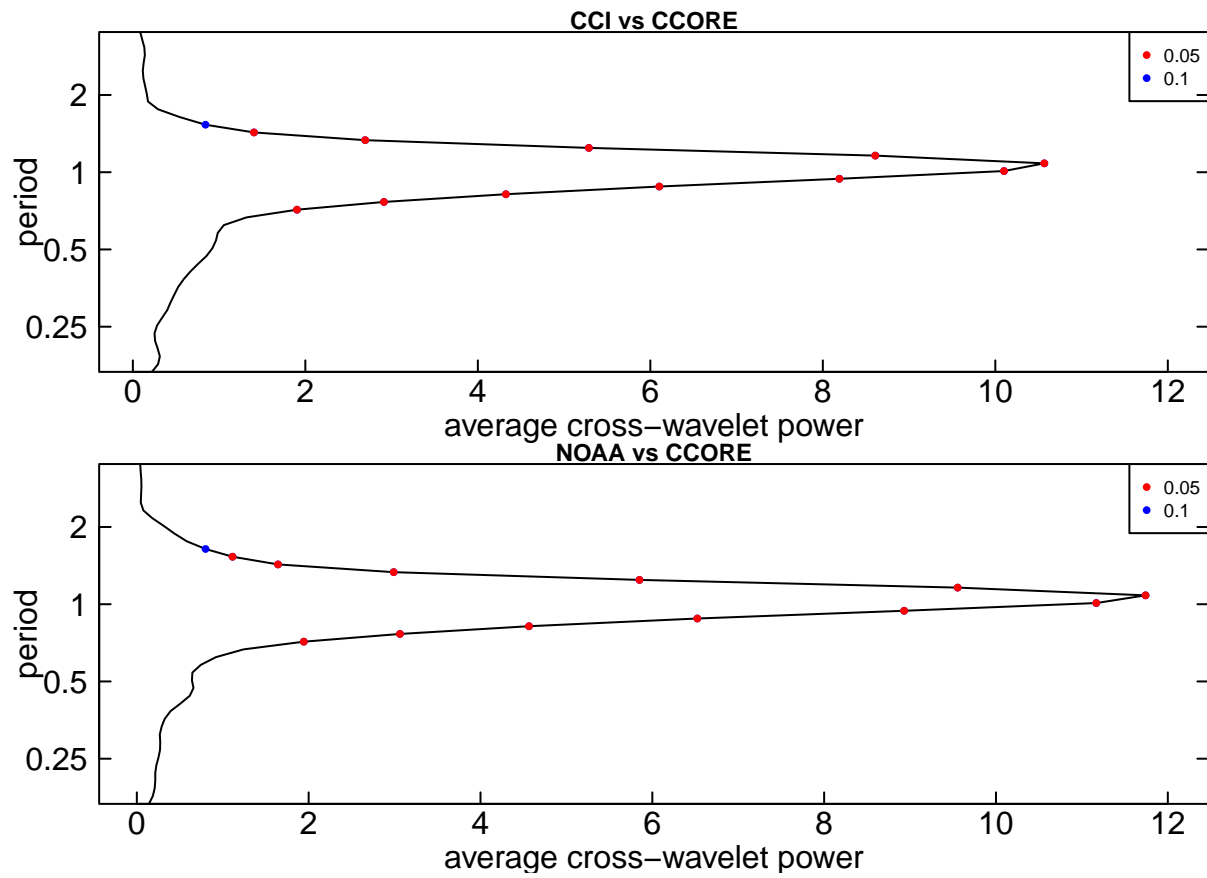


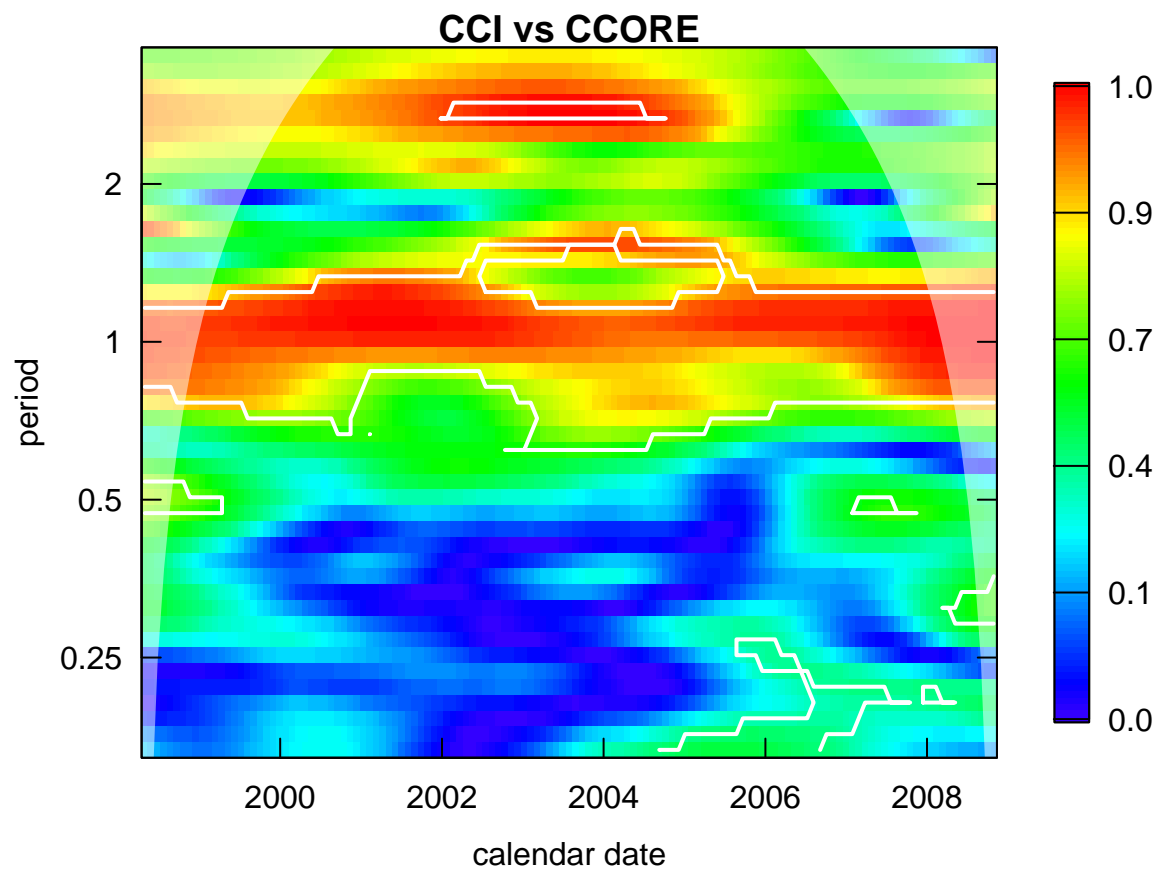


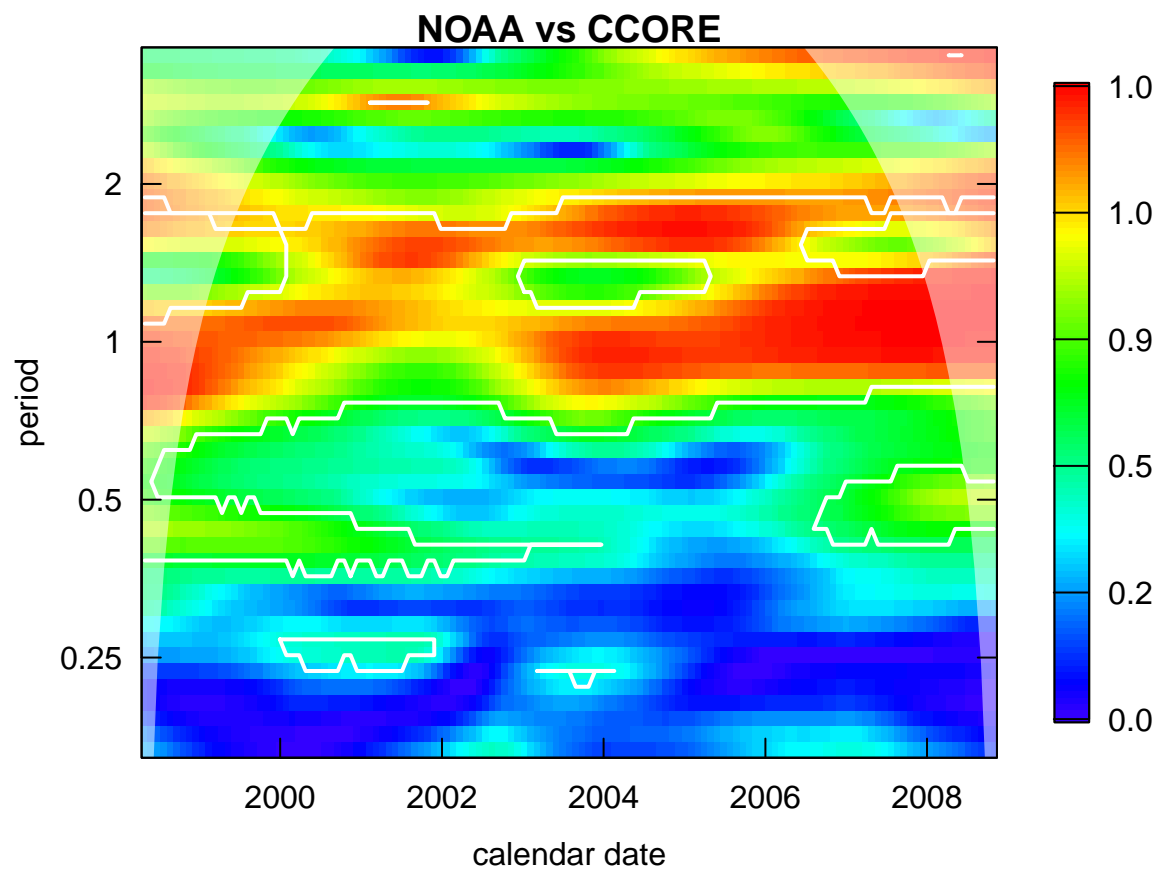








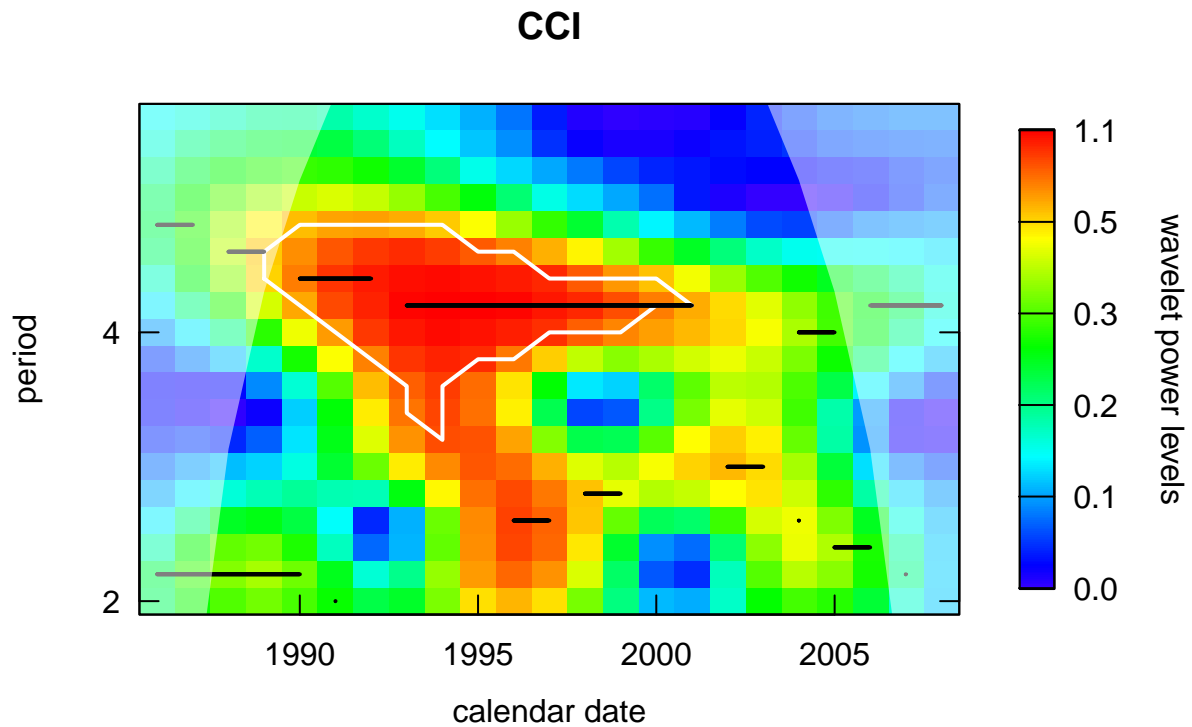


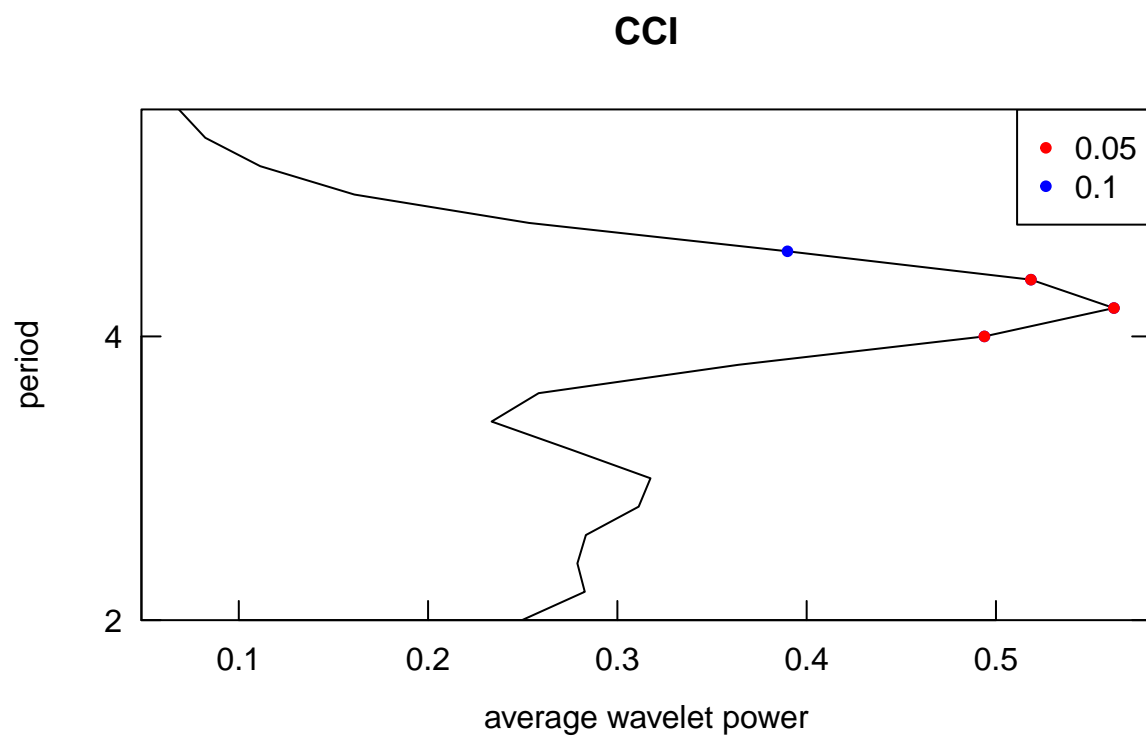


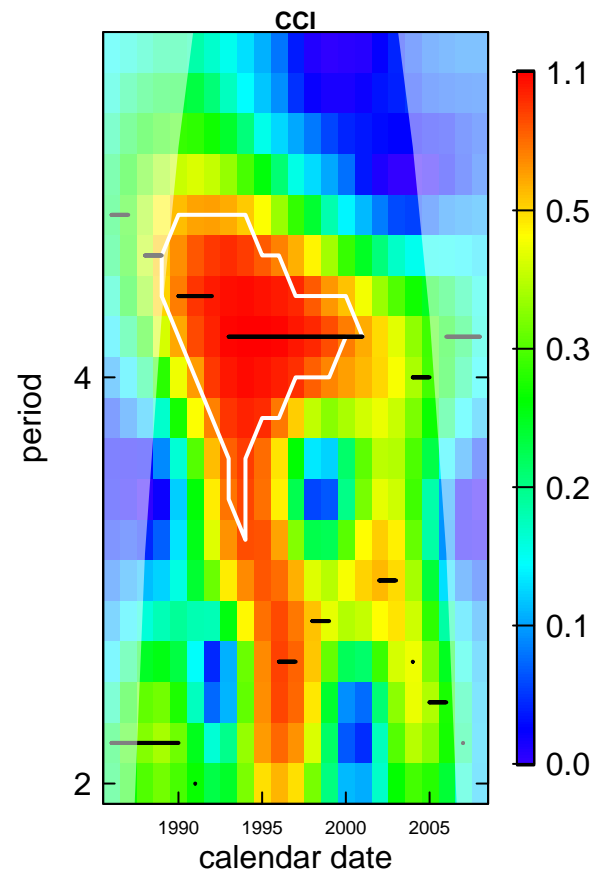
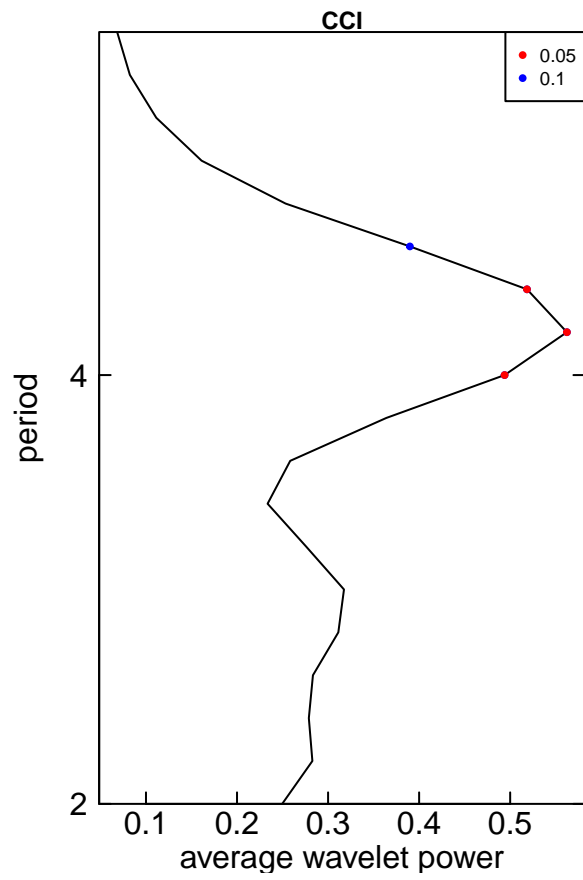
Annual Coral Core Proxy Sites

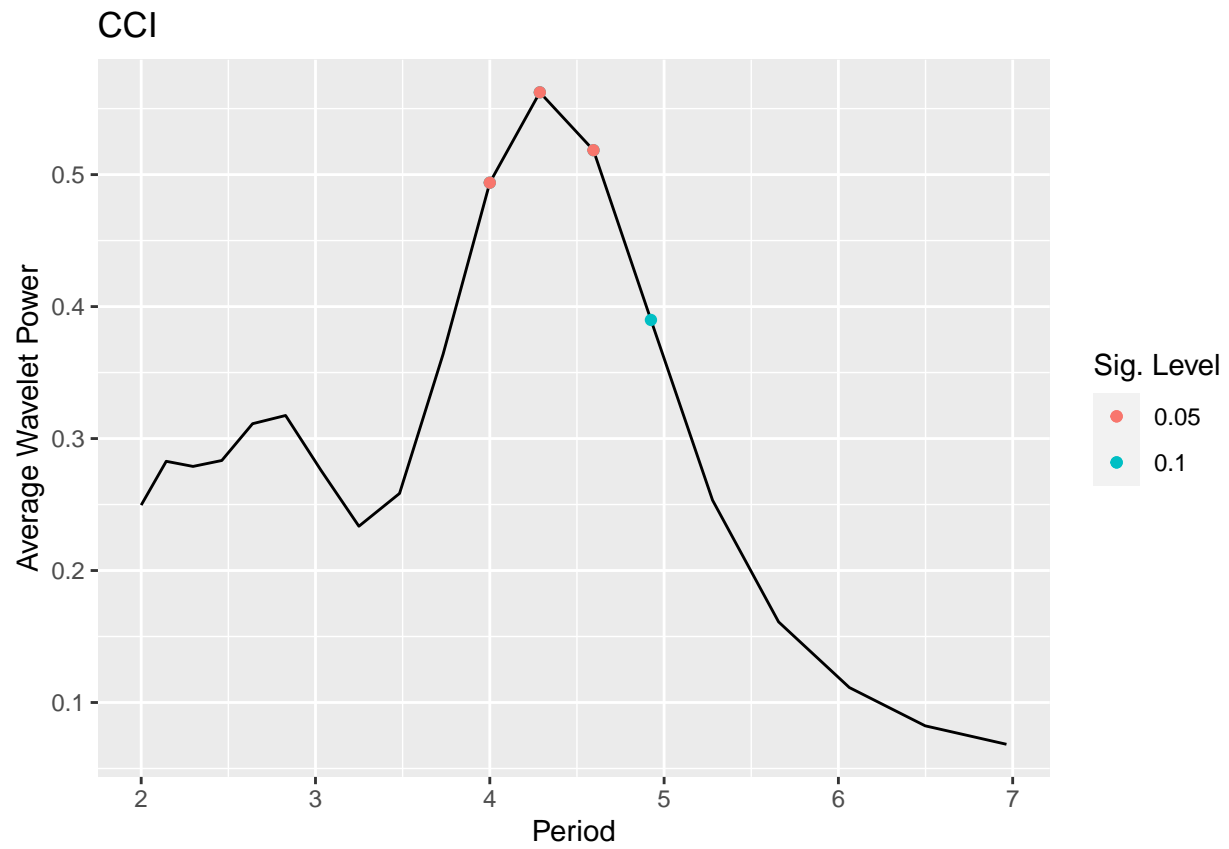
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```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
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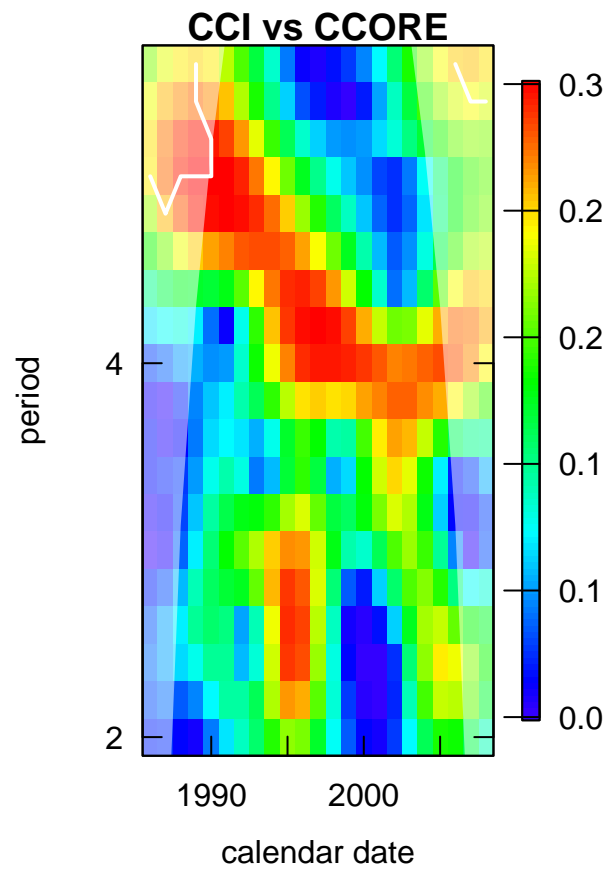
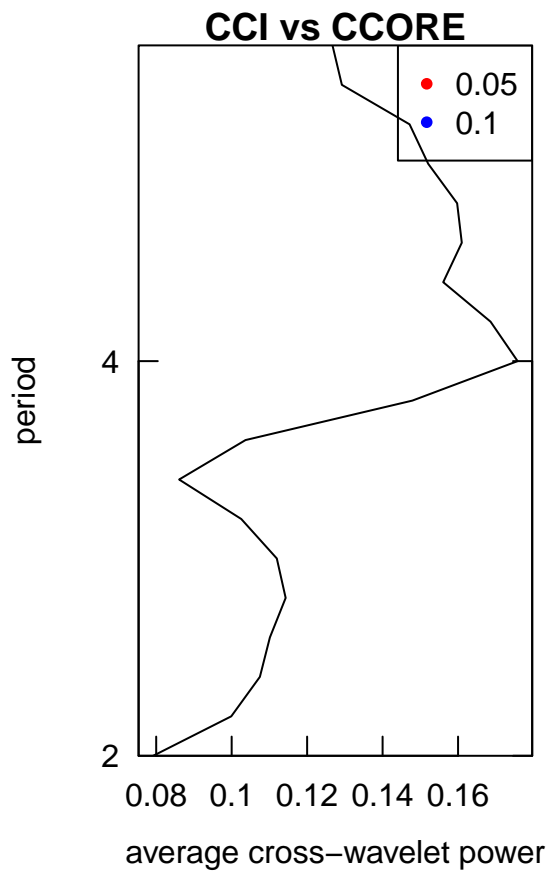


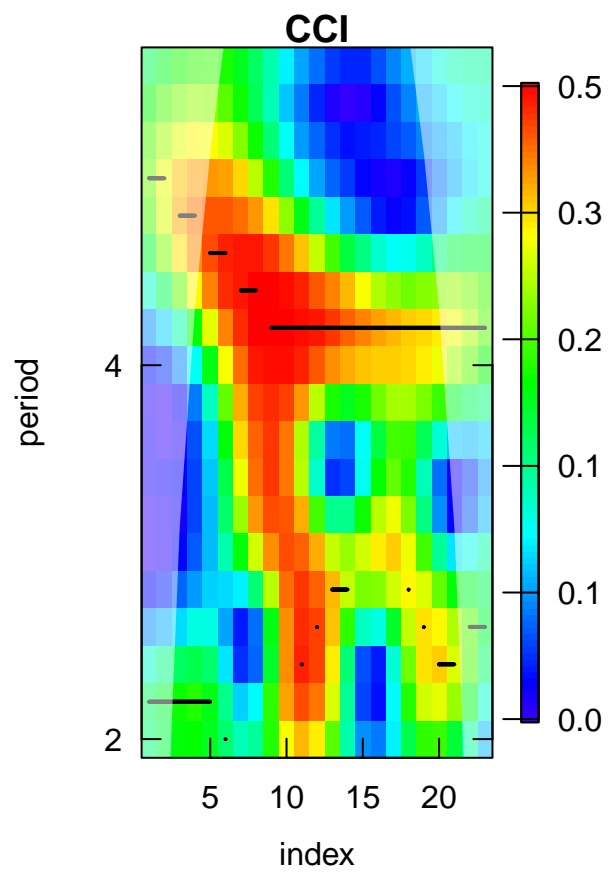


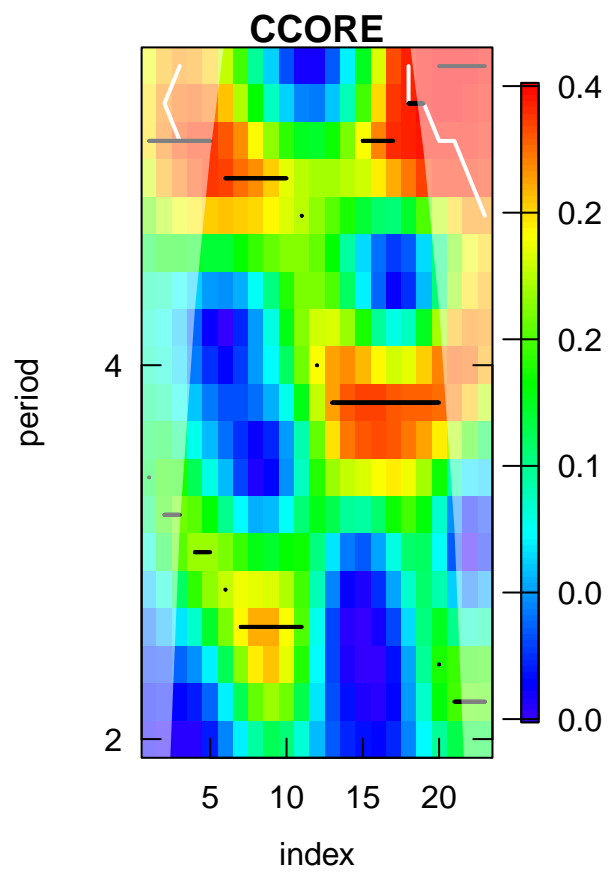


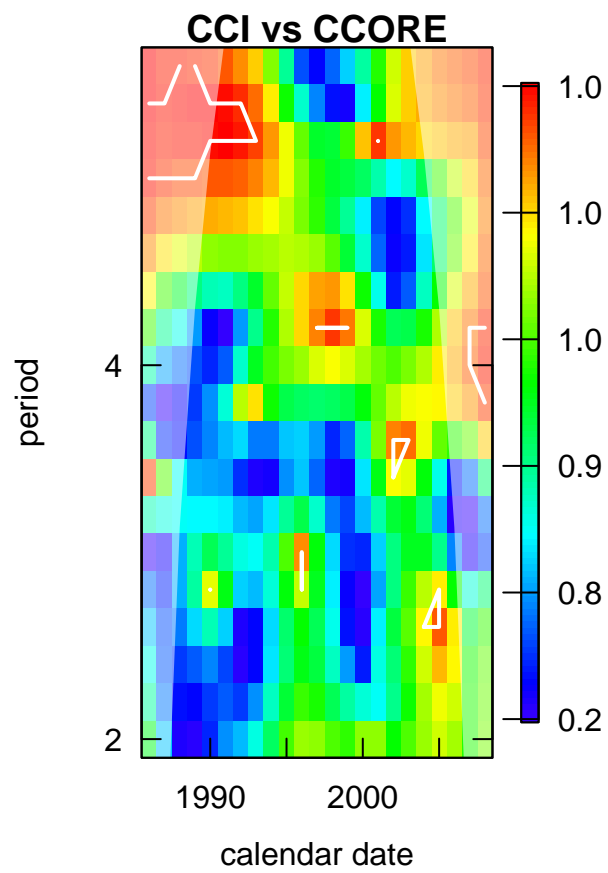
```
## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
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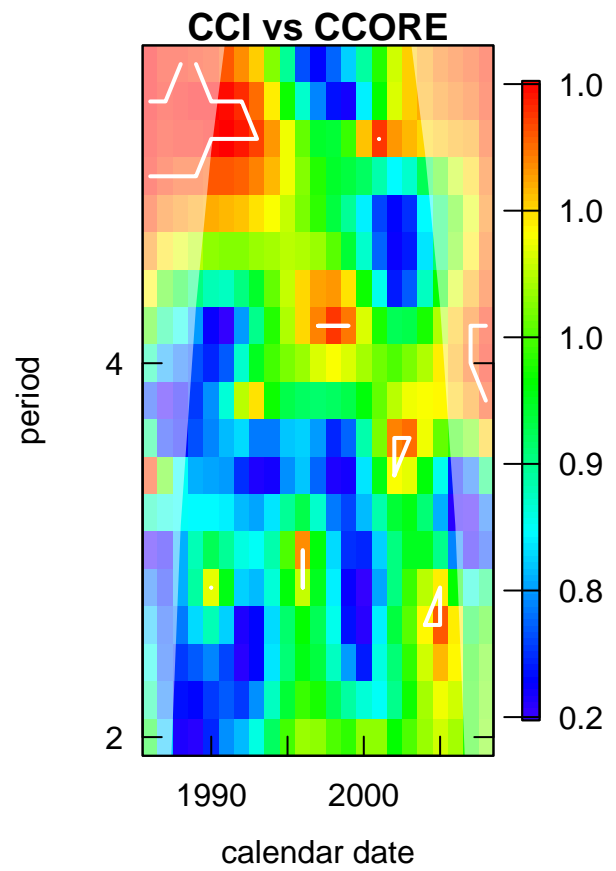
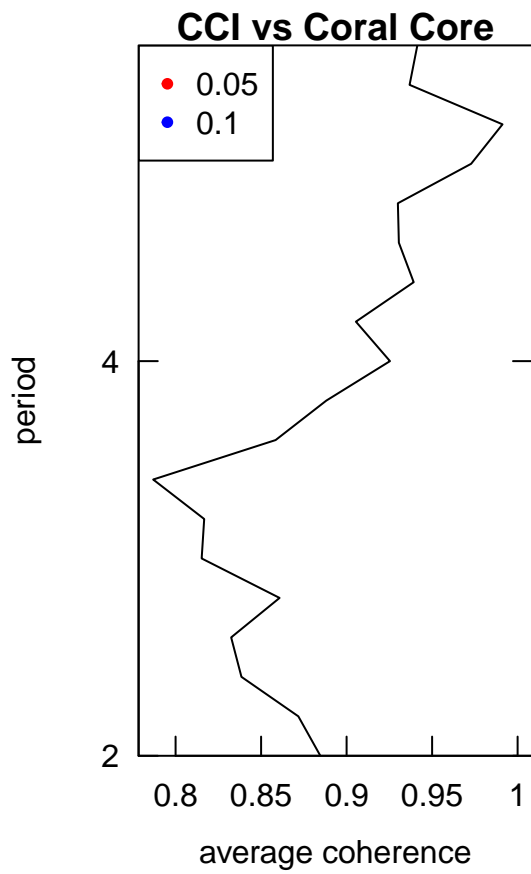
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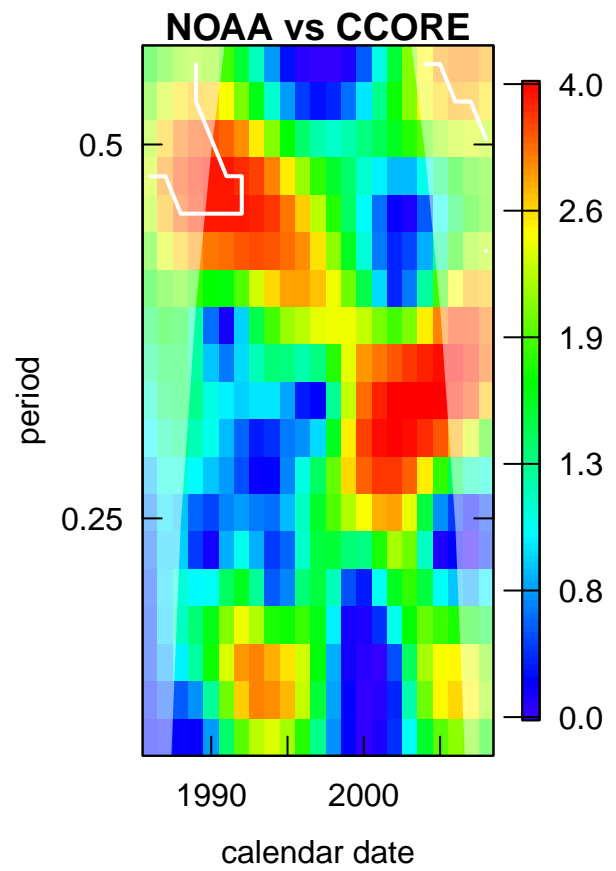
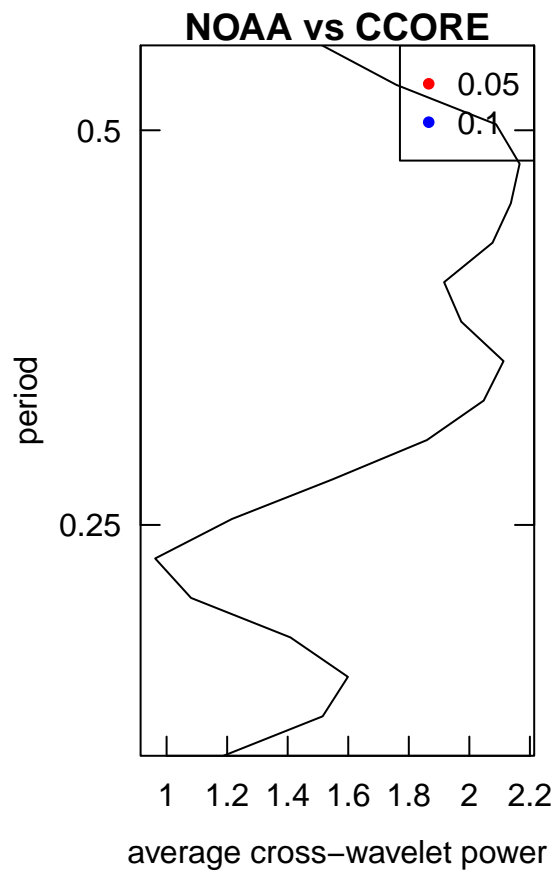


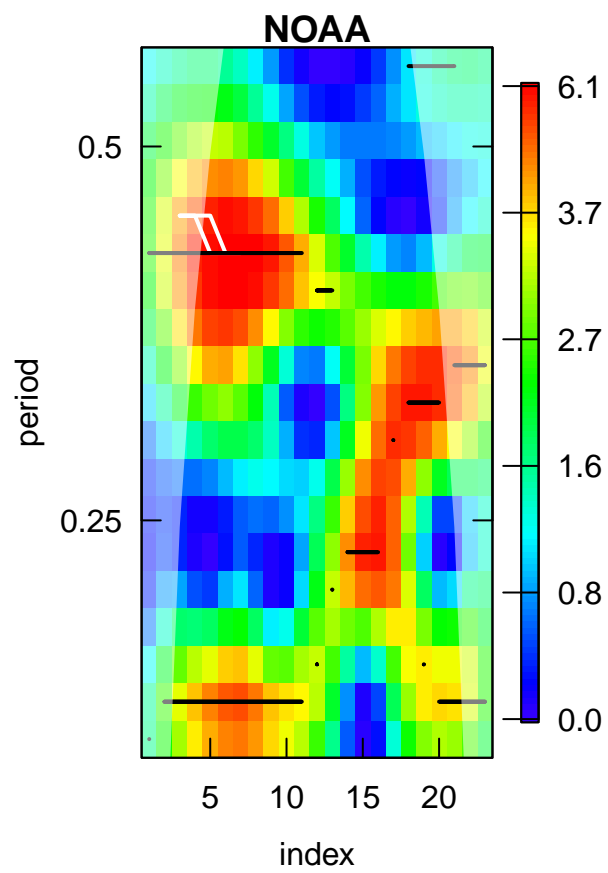


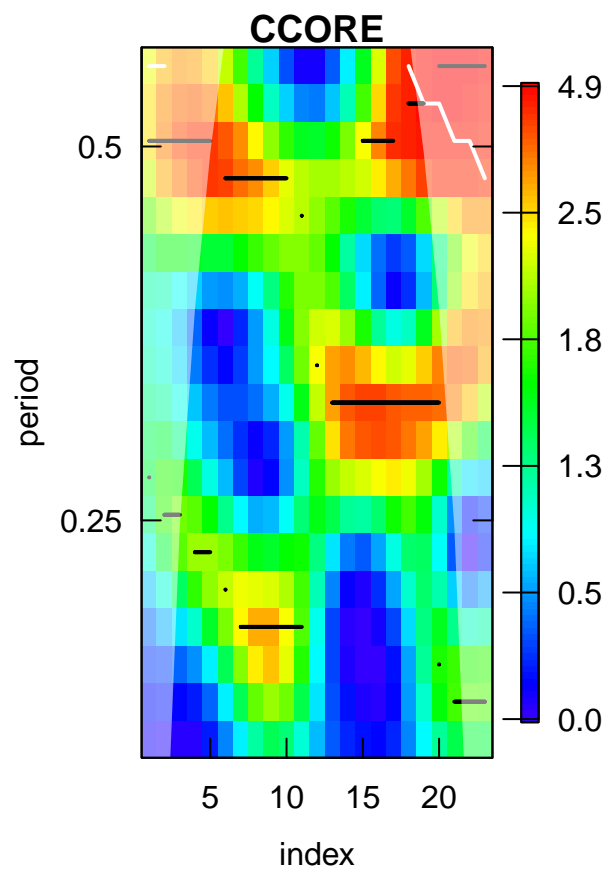


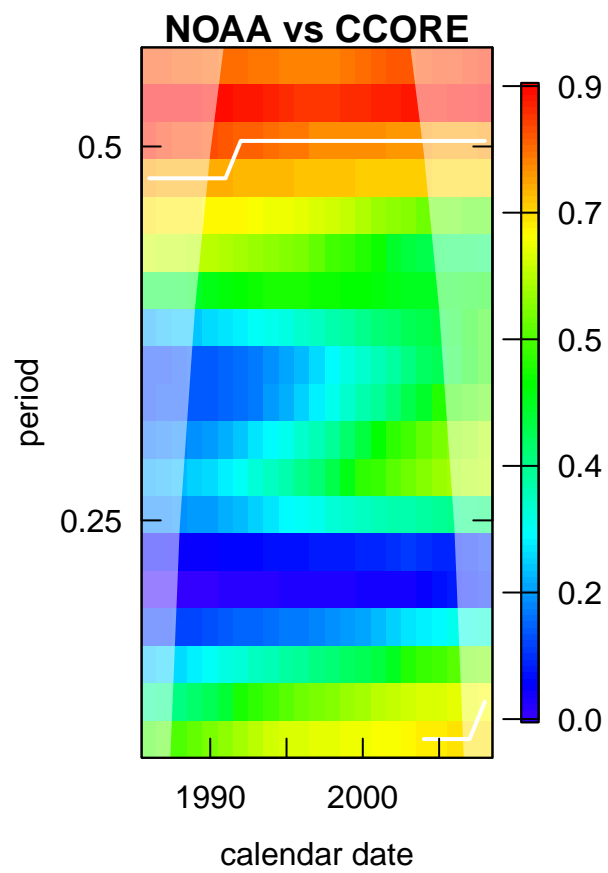
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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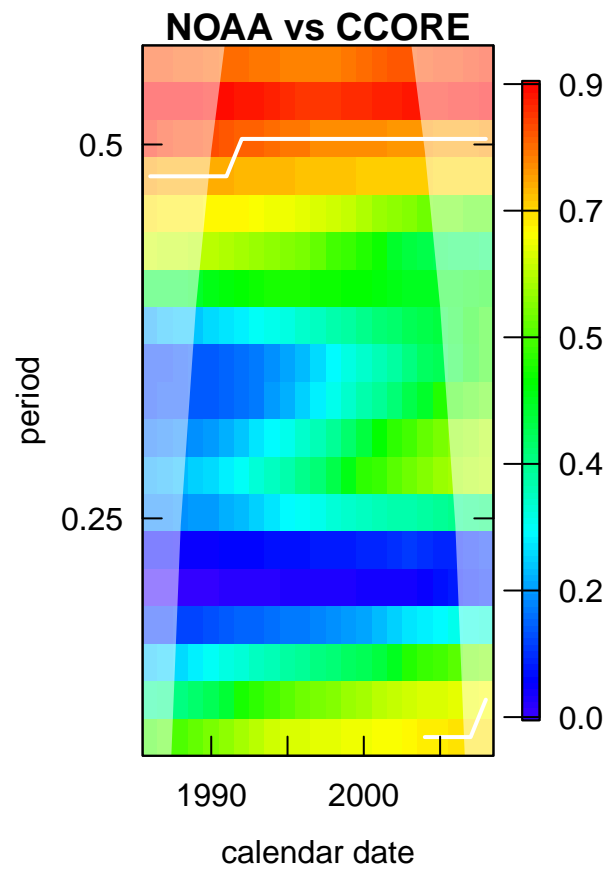
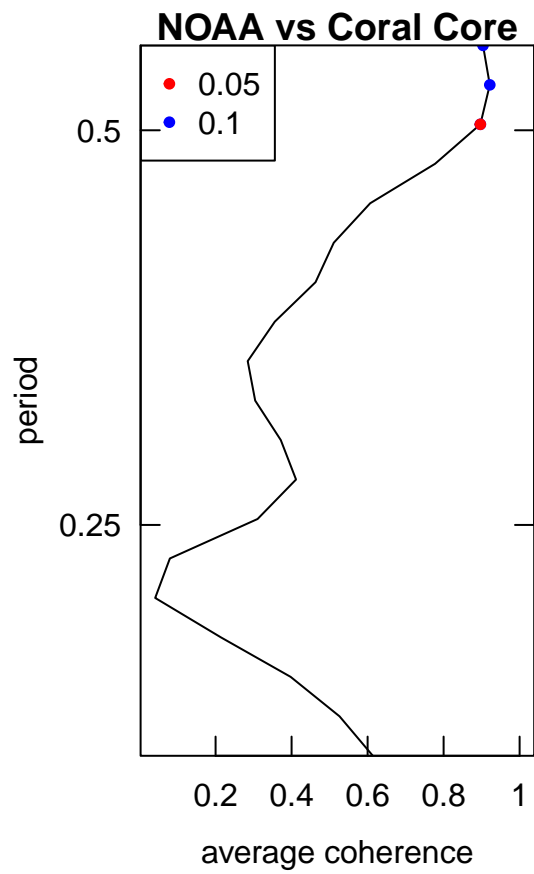
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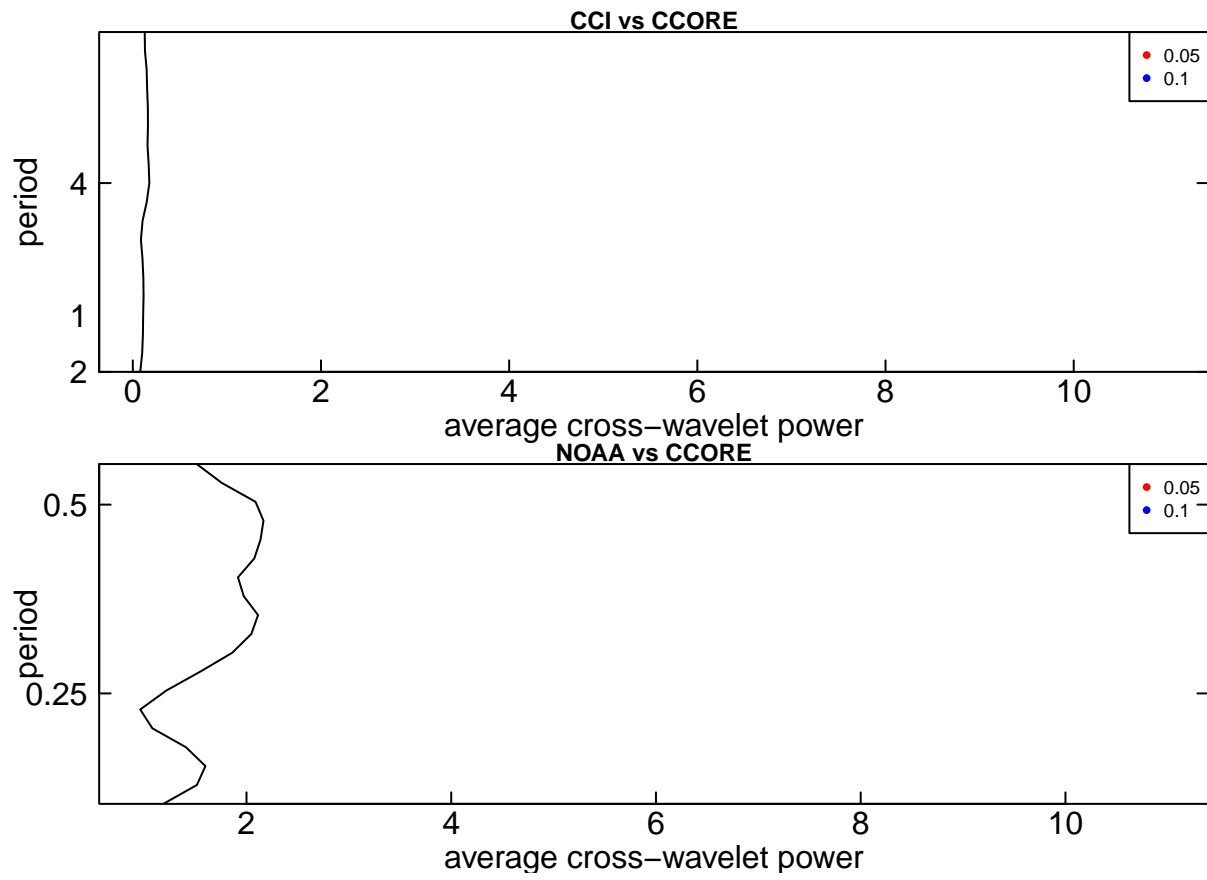


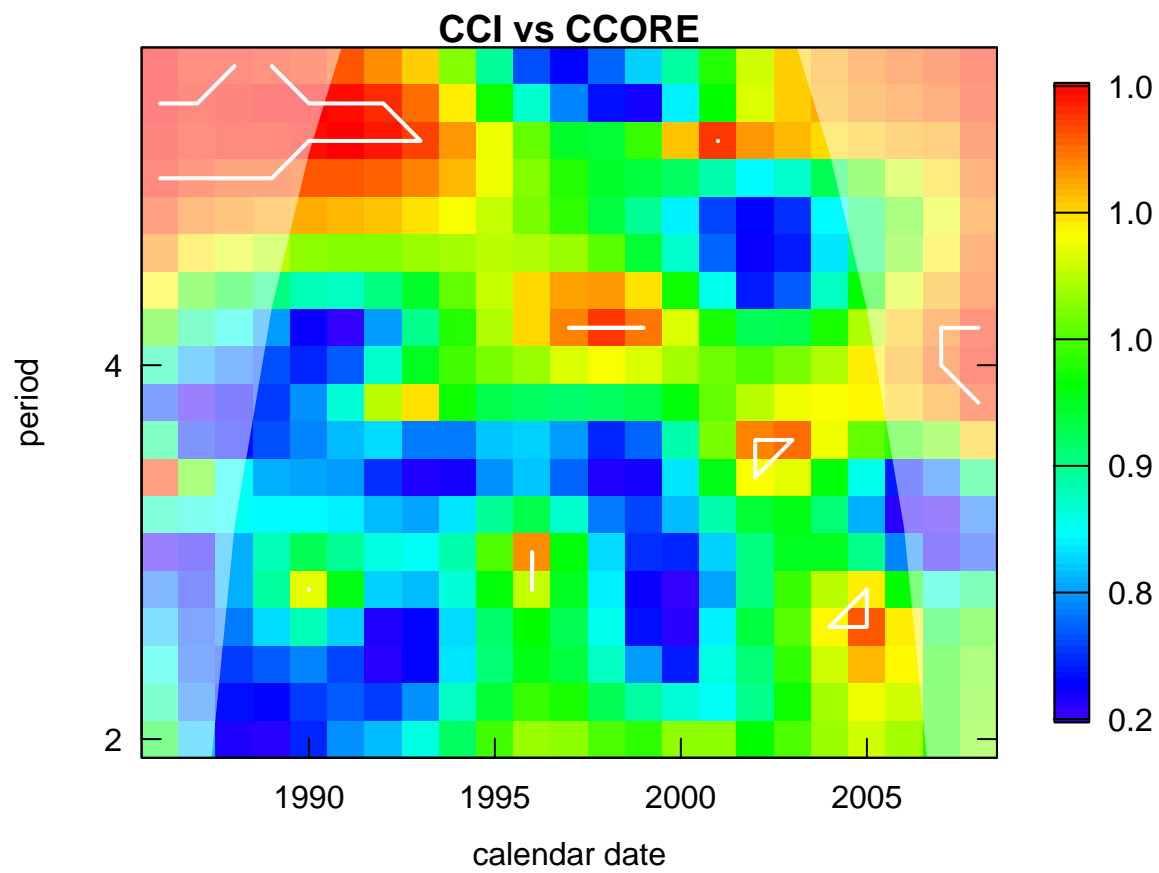


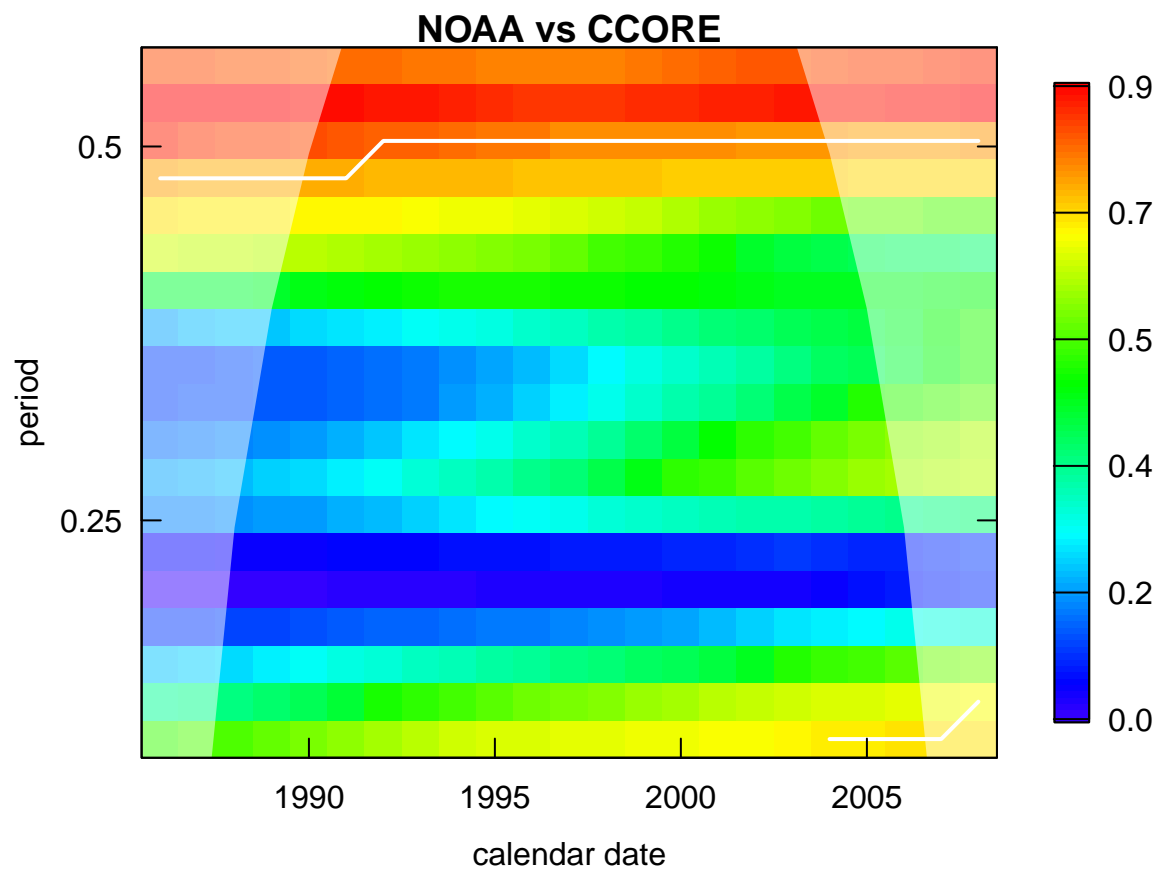








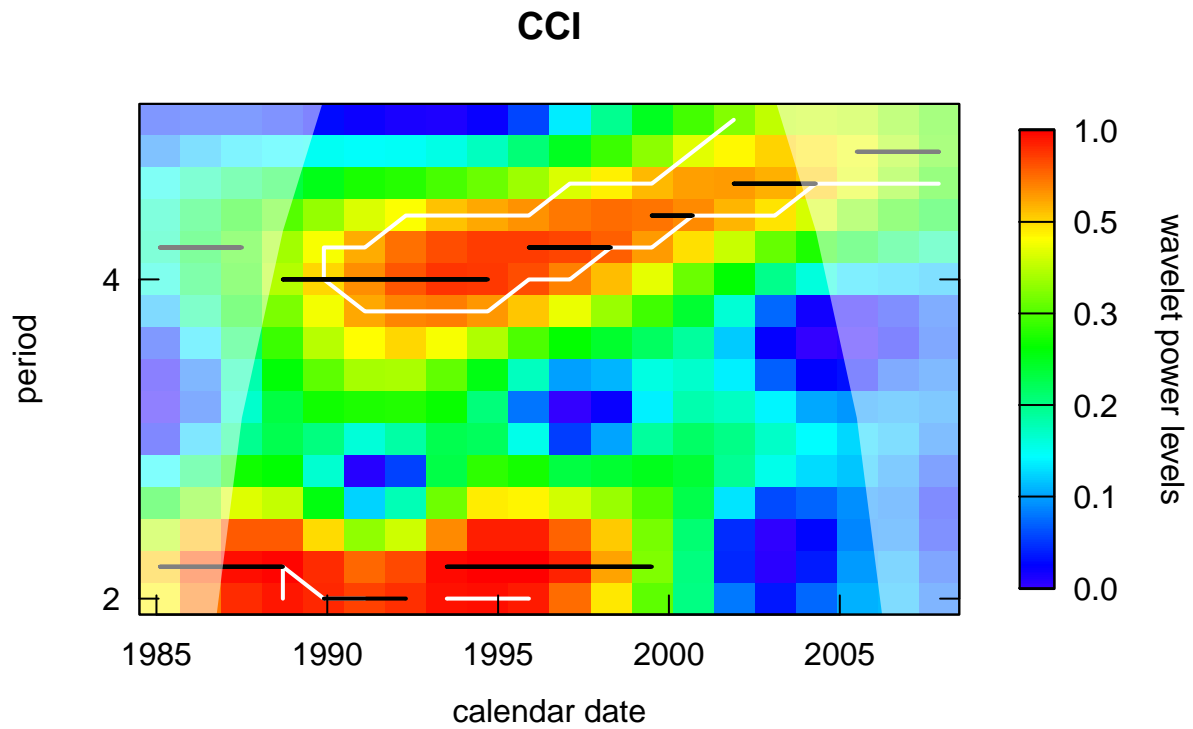


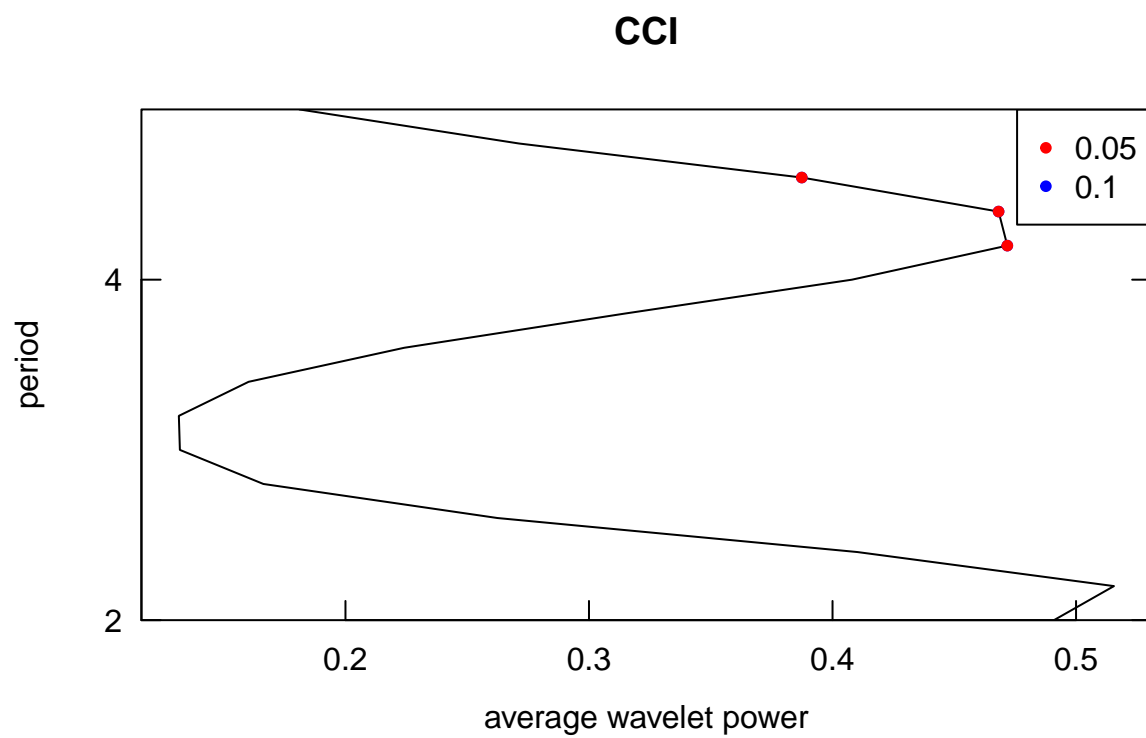


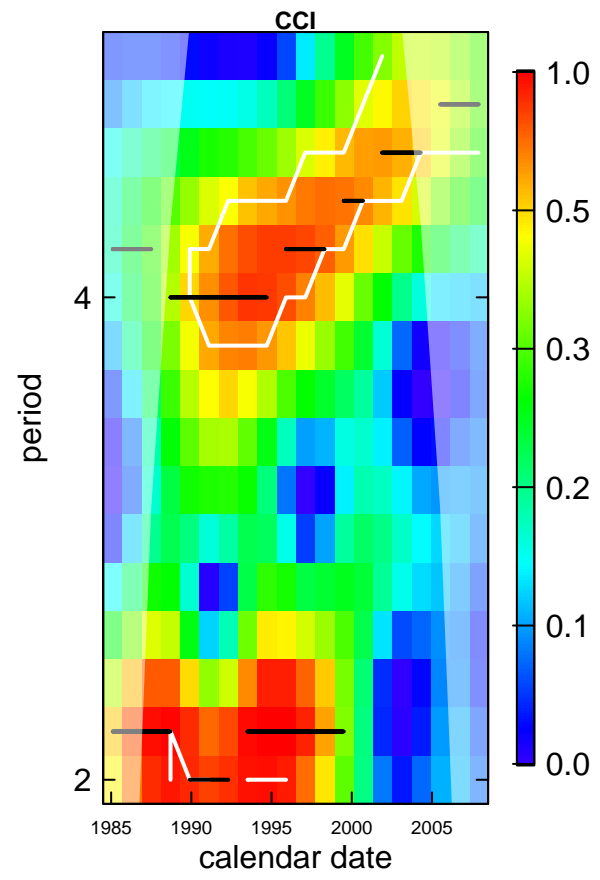
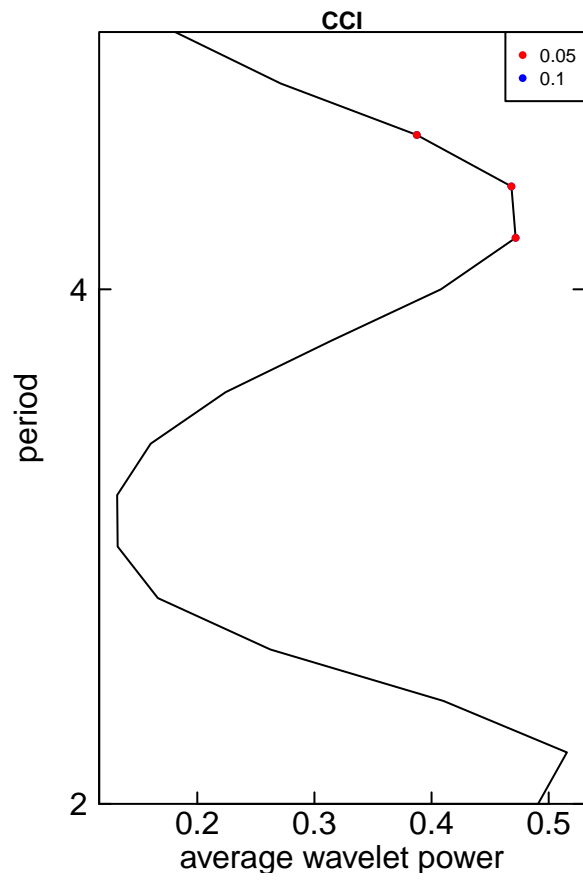
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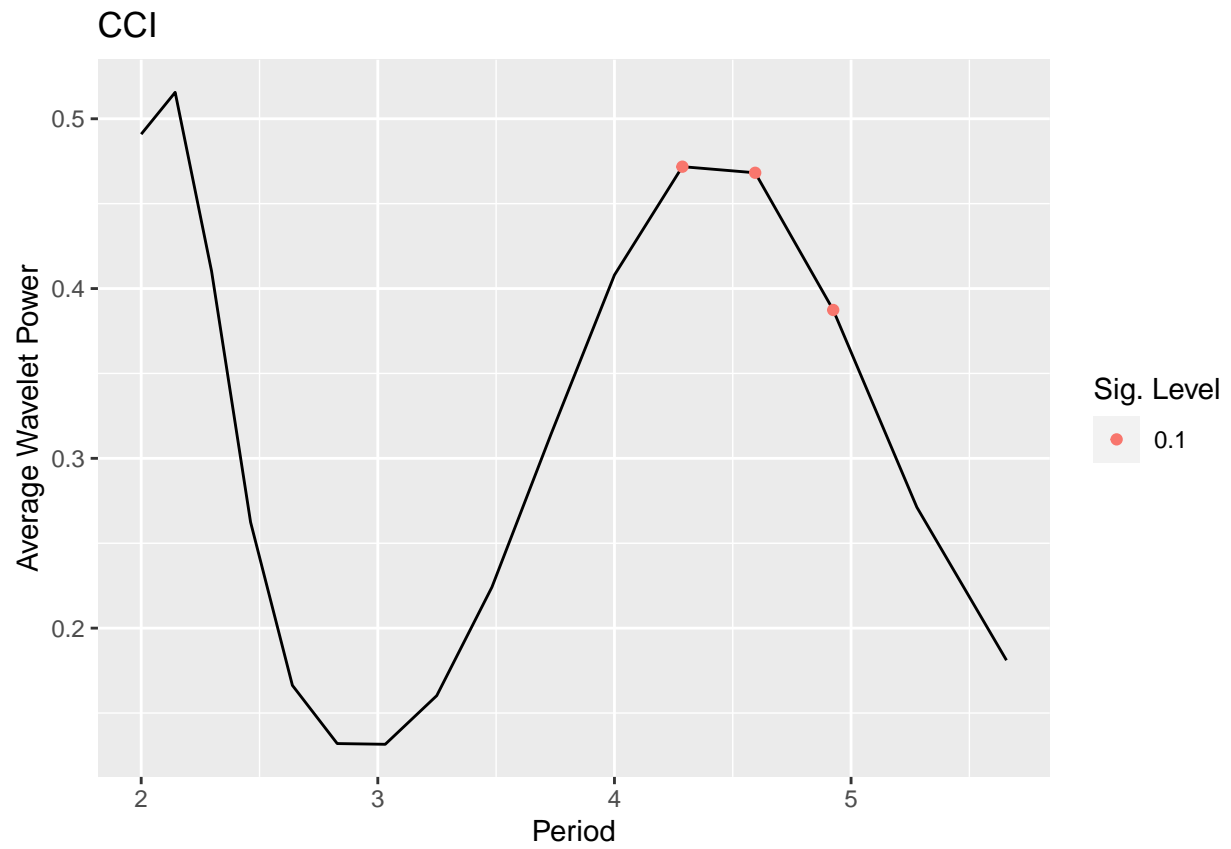
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
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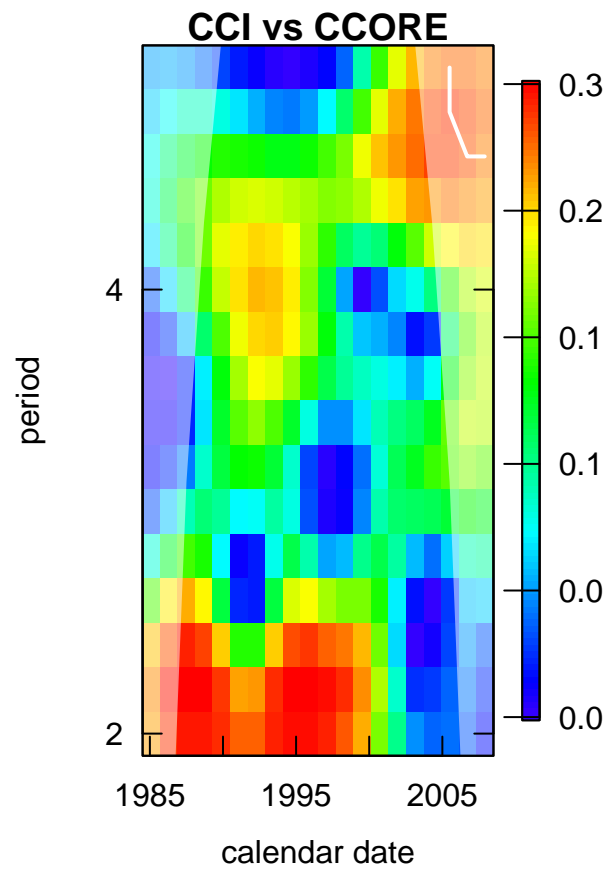
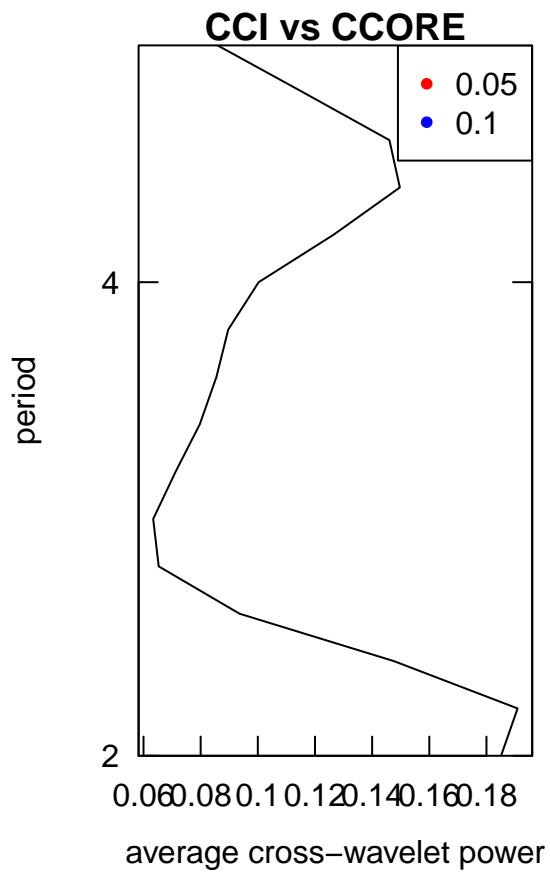


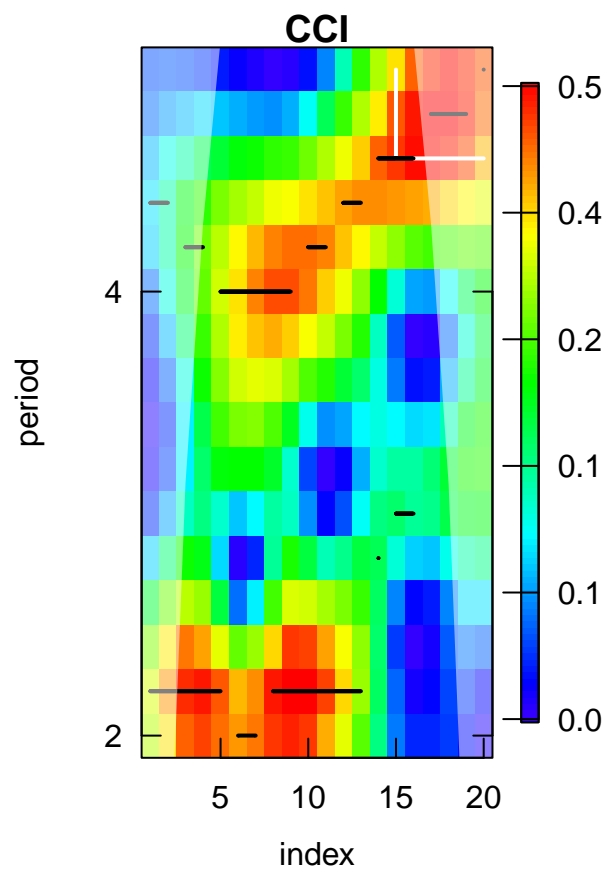


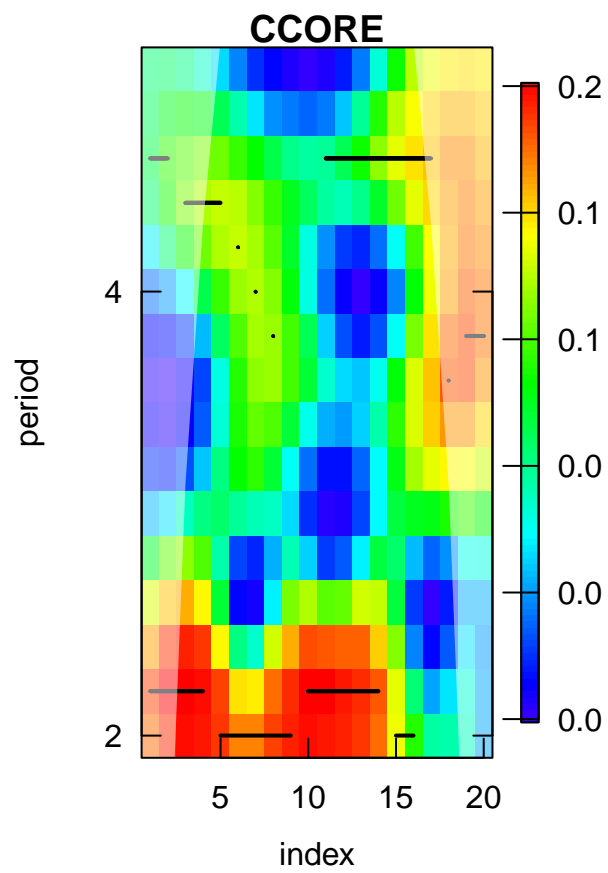


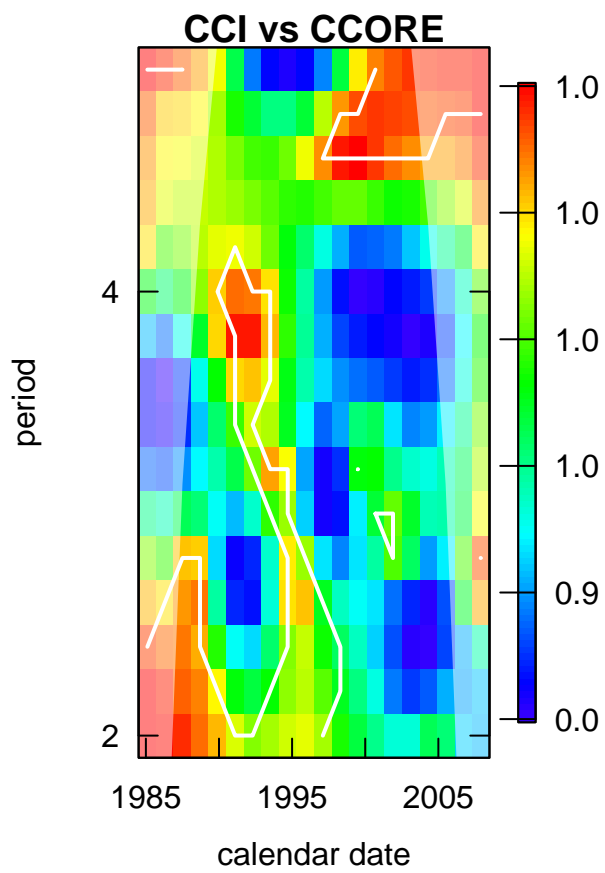
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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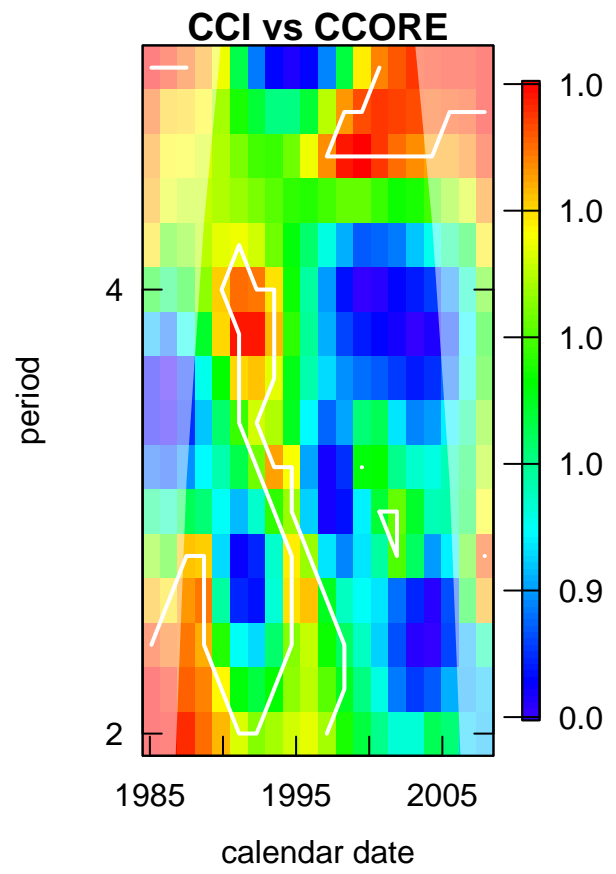
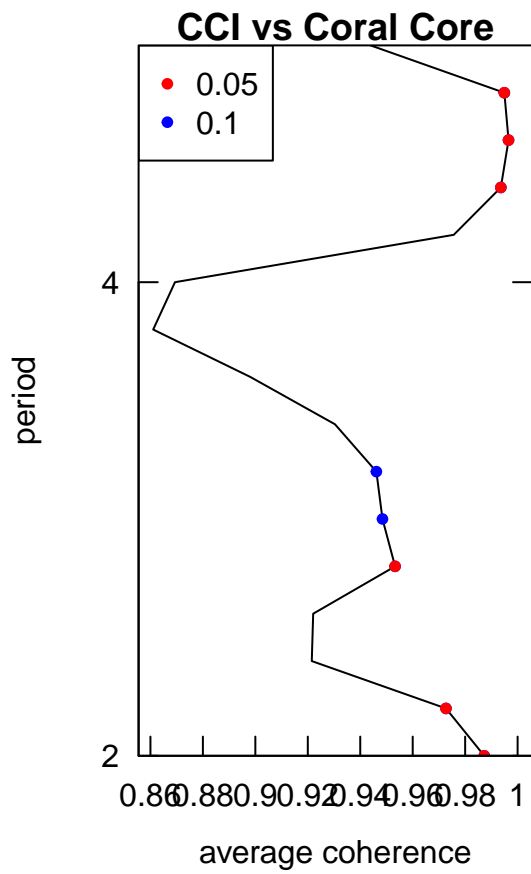
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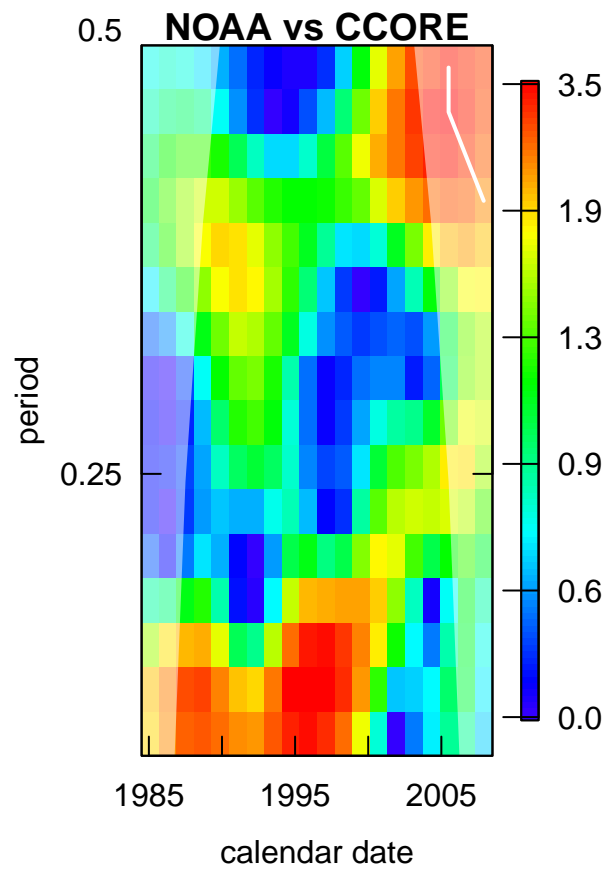
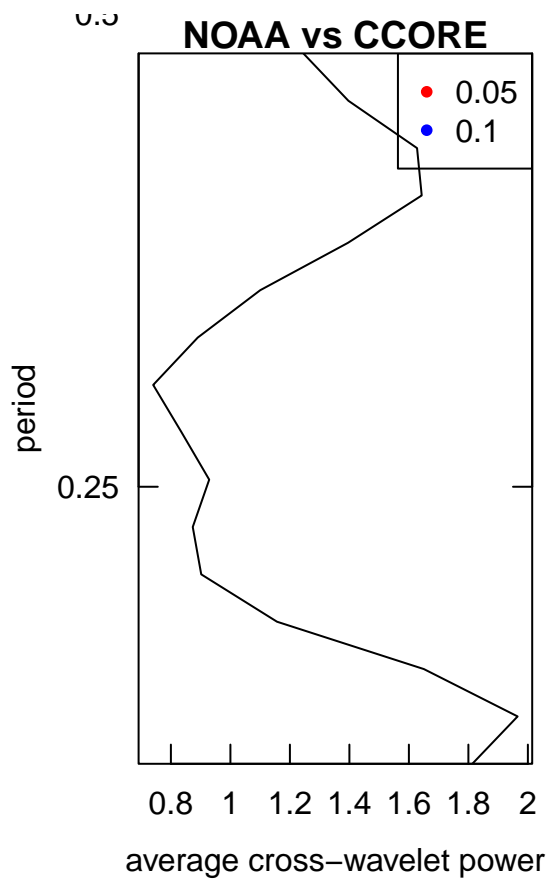


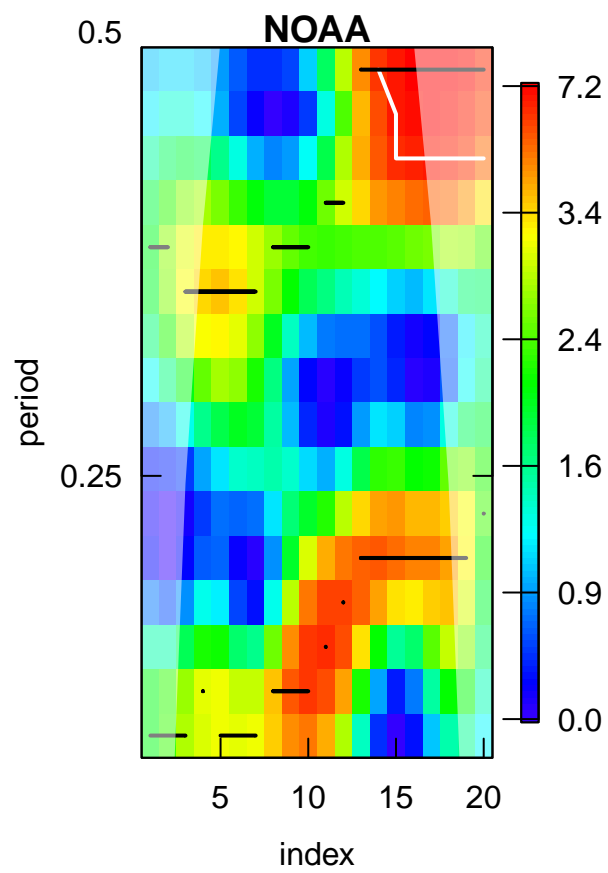


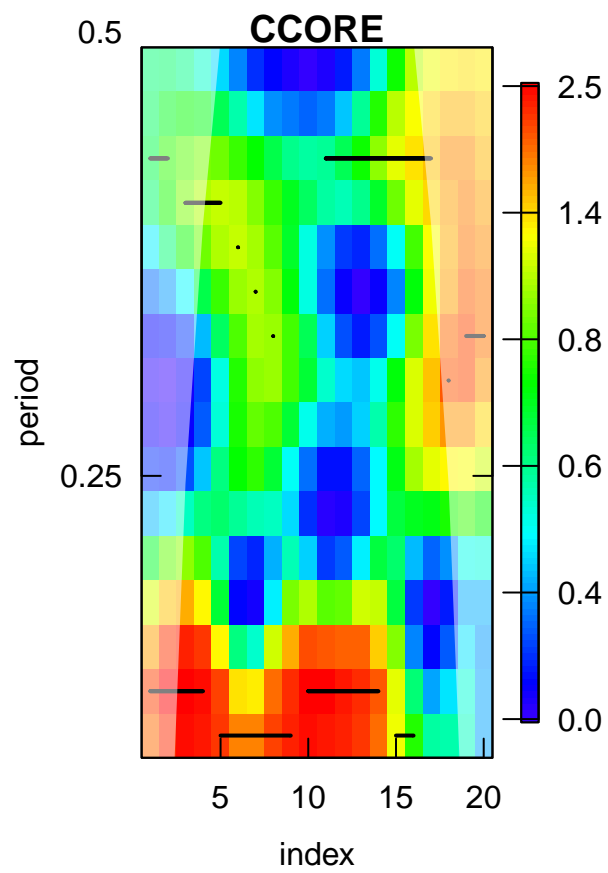


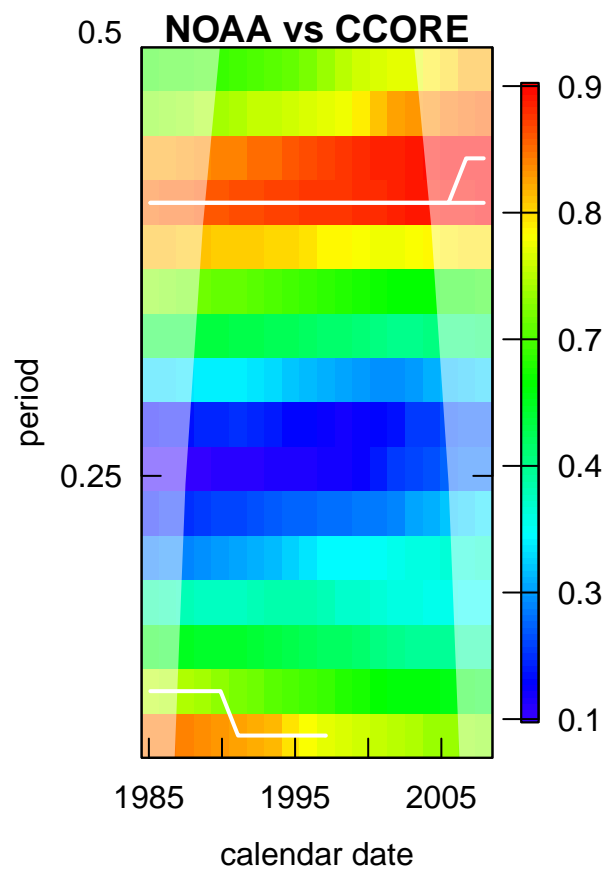
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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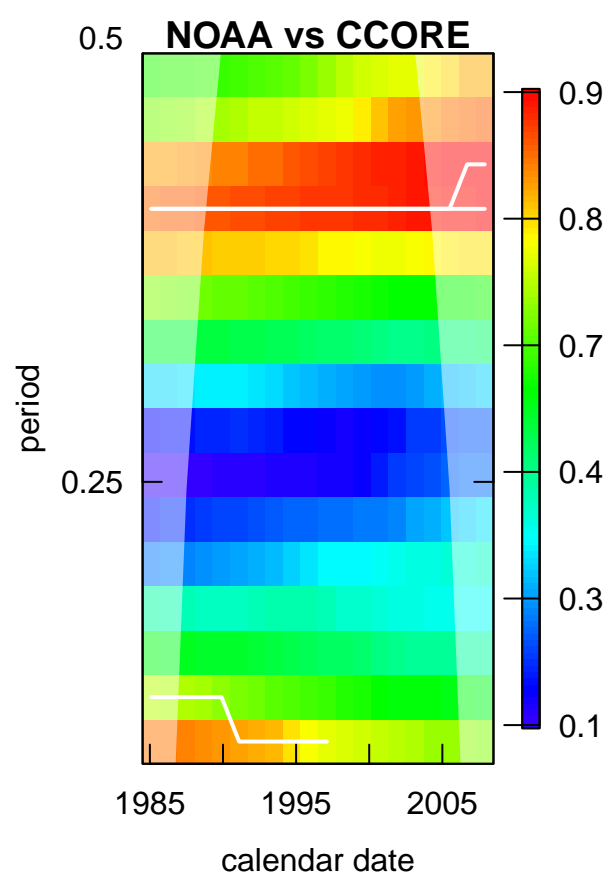
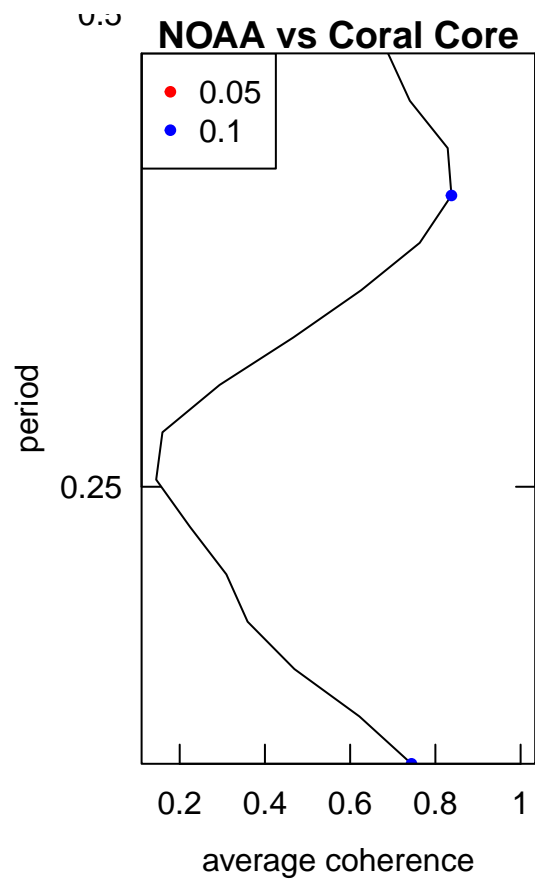
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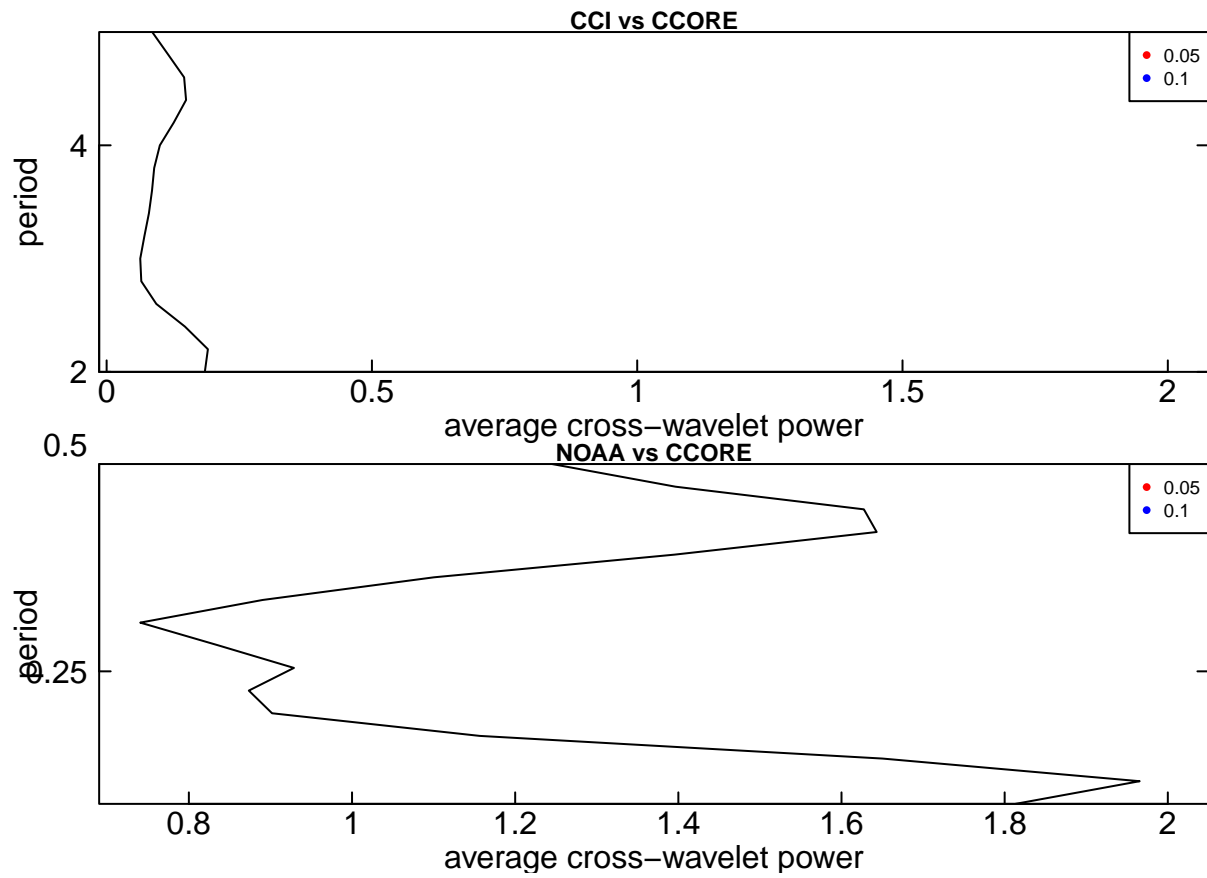


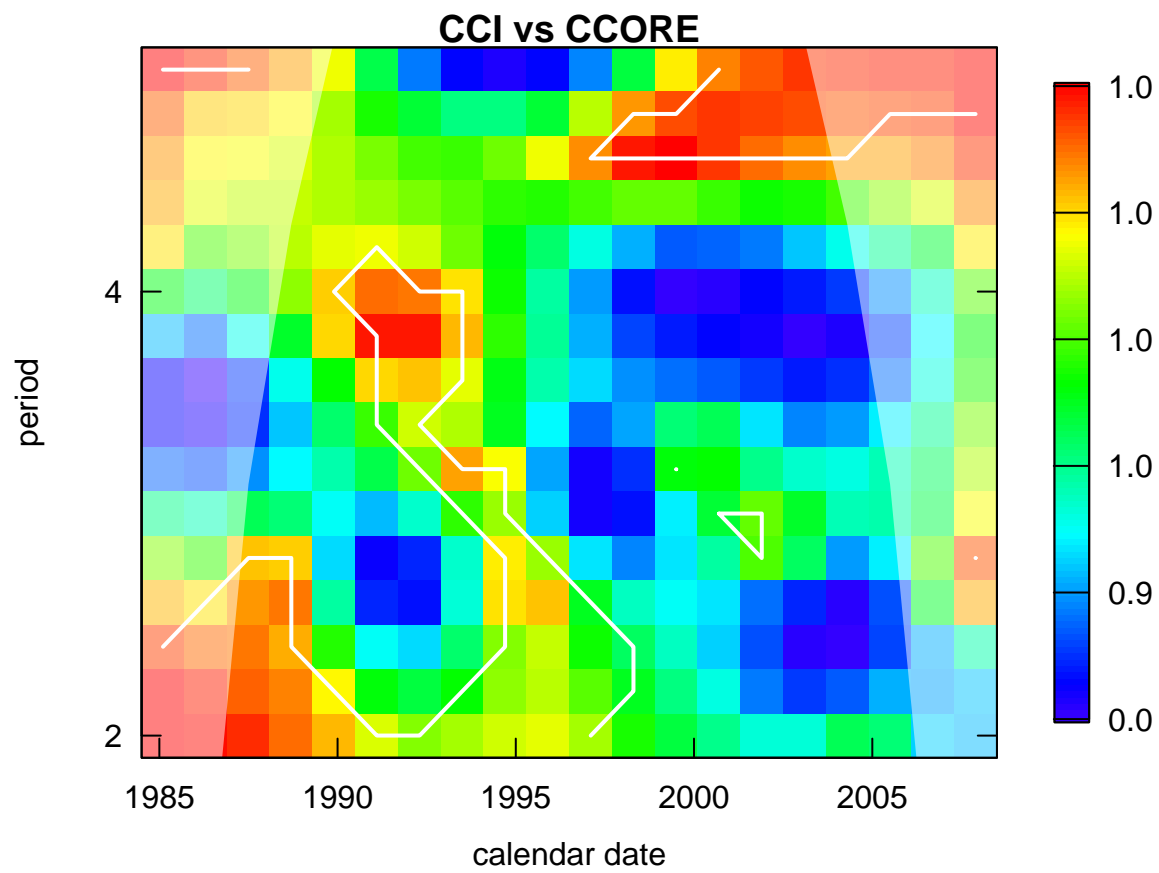


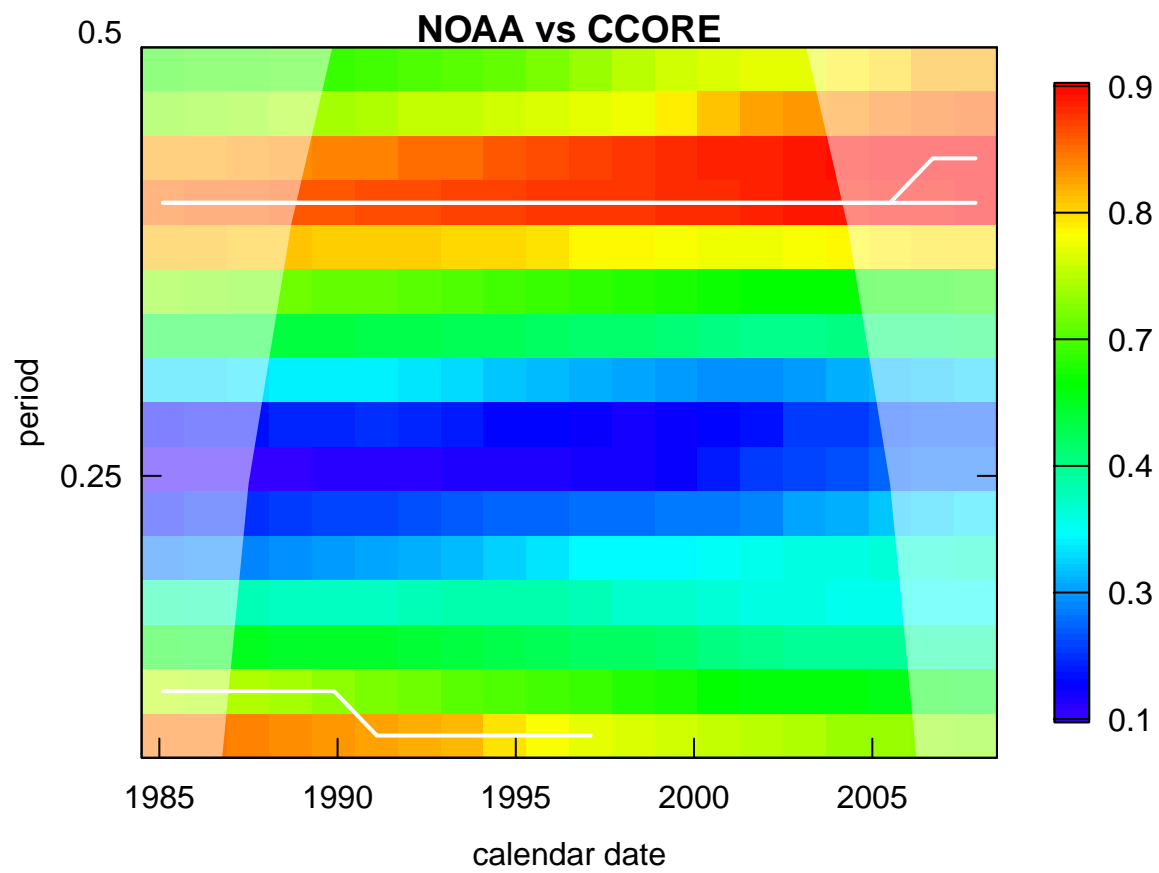








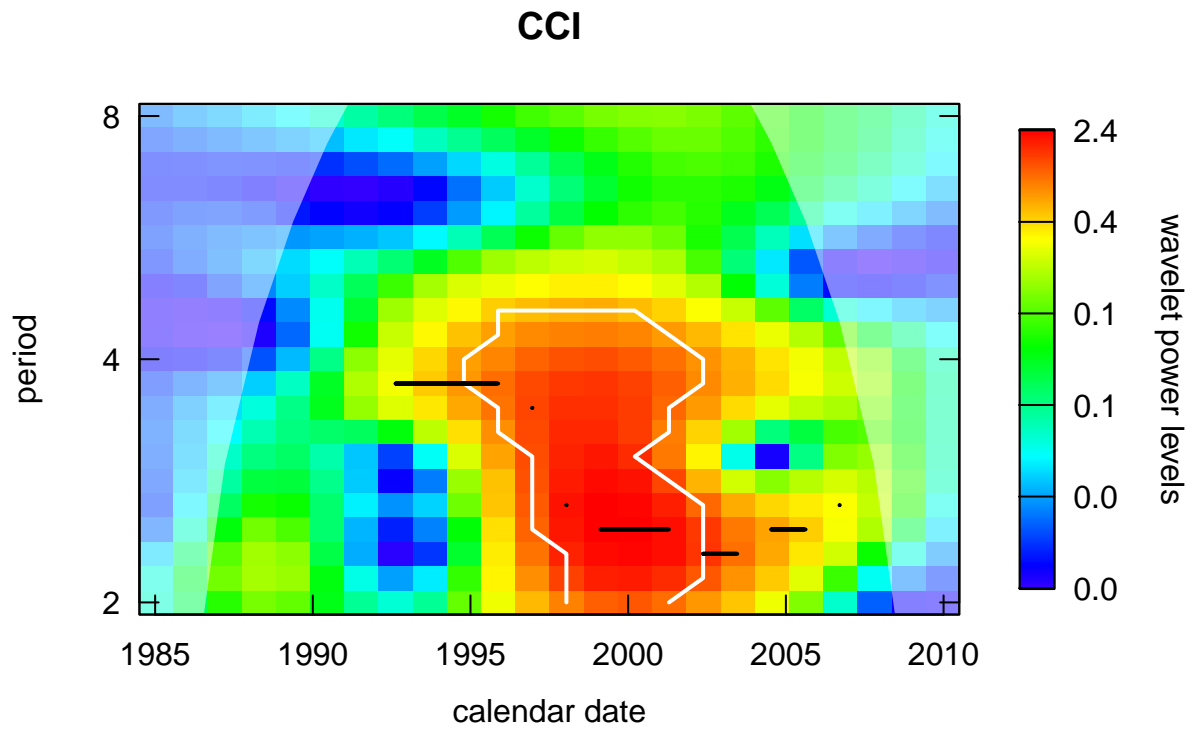


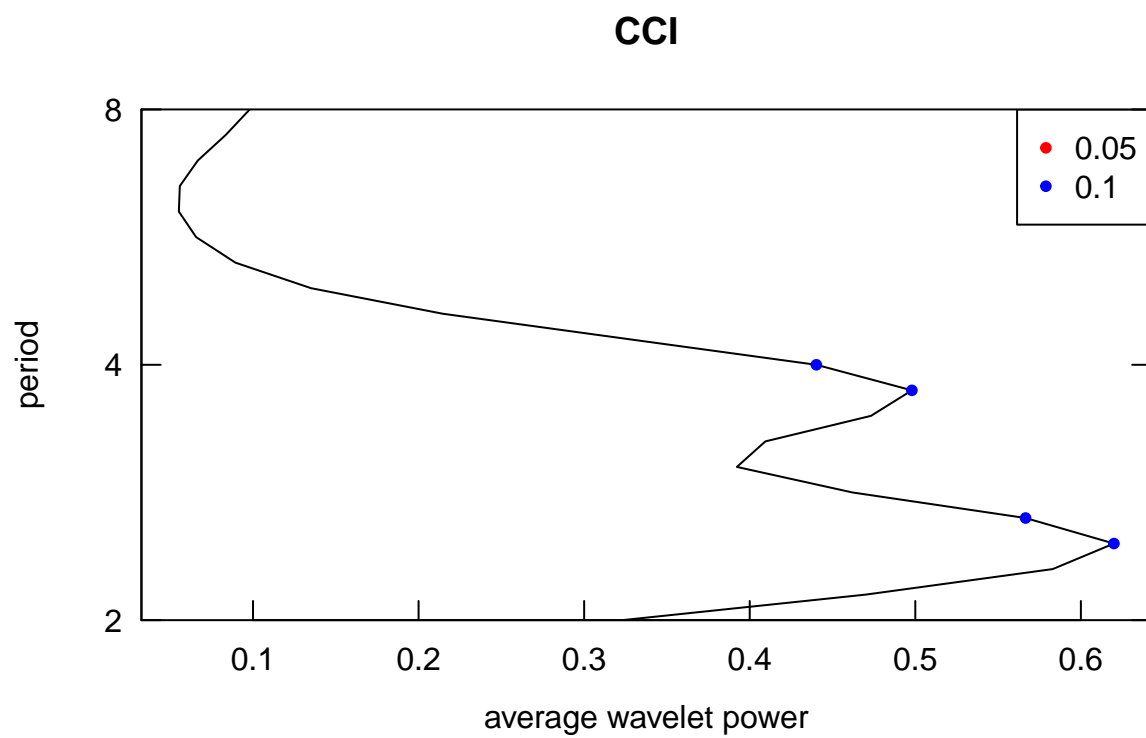


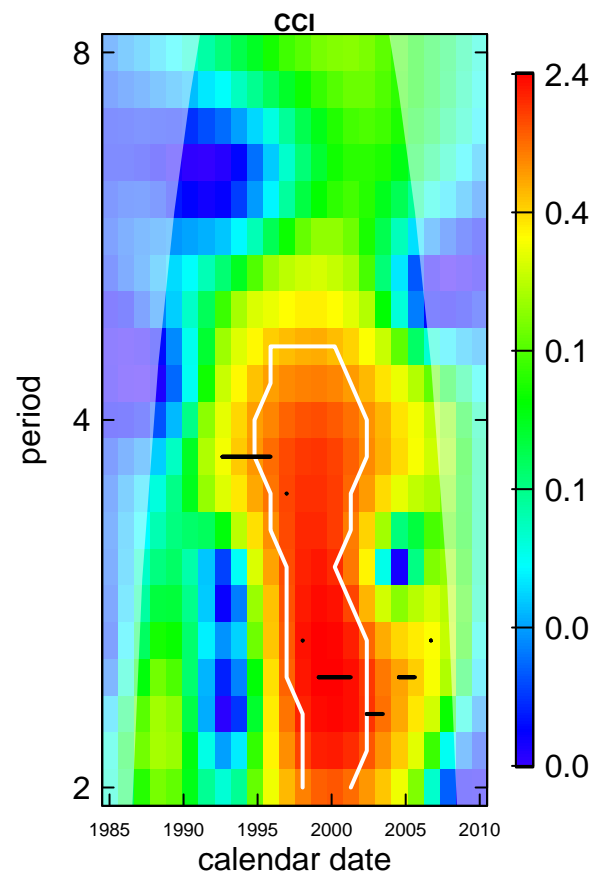
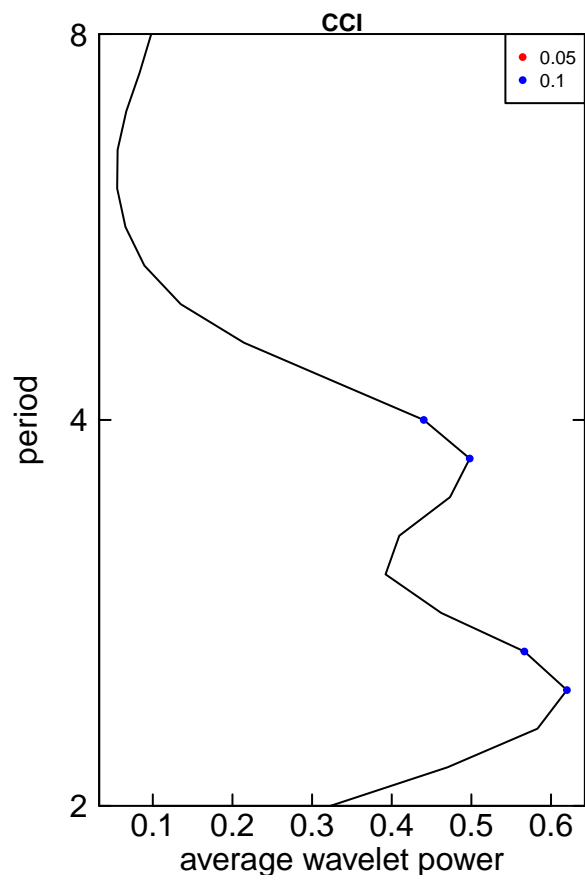
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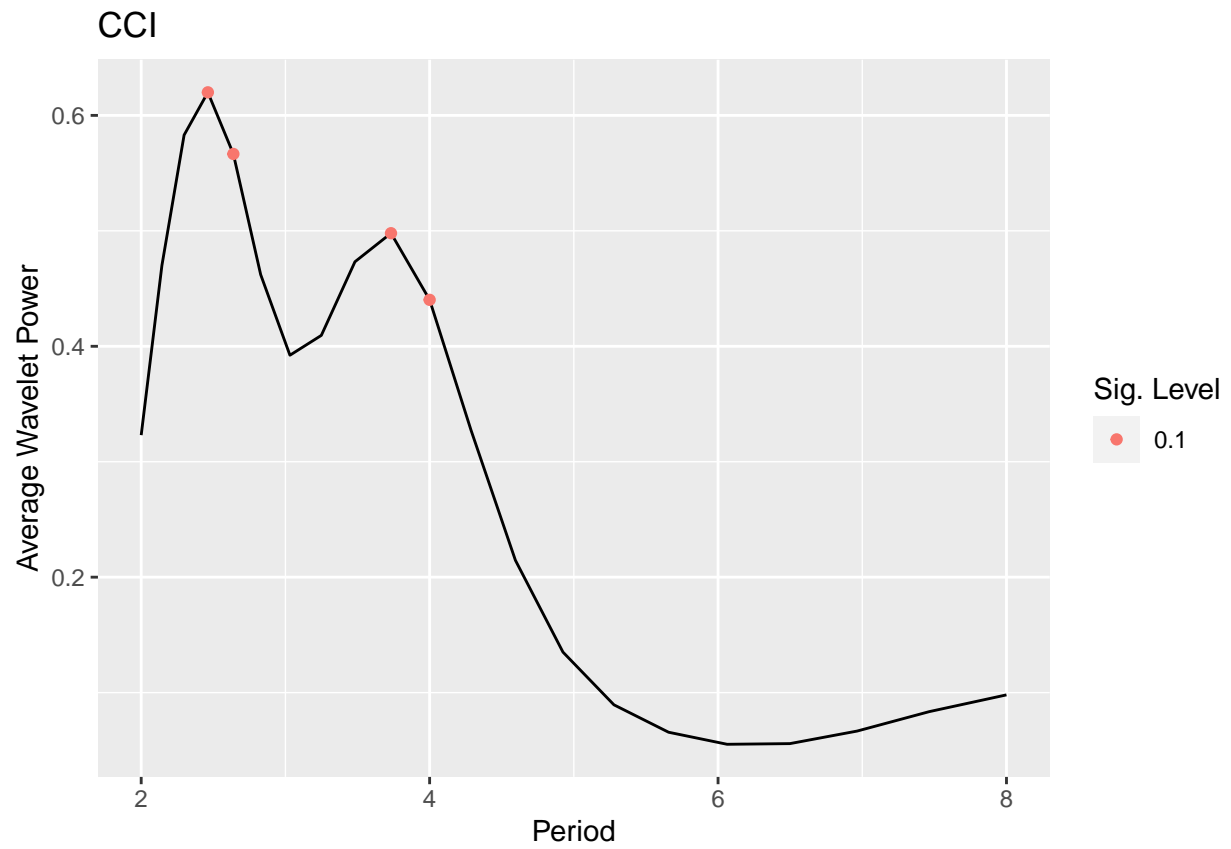
```
## Smoothing the time series...  
## Starting wavelet transformation...  
## ... and simulations...  
## |
```

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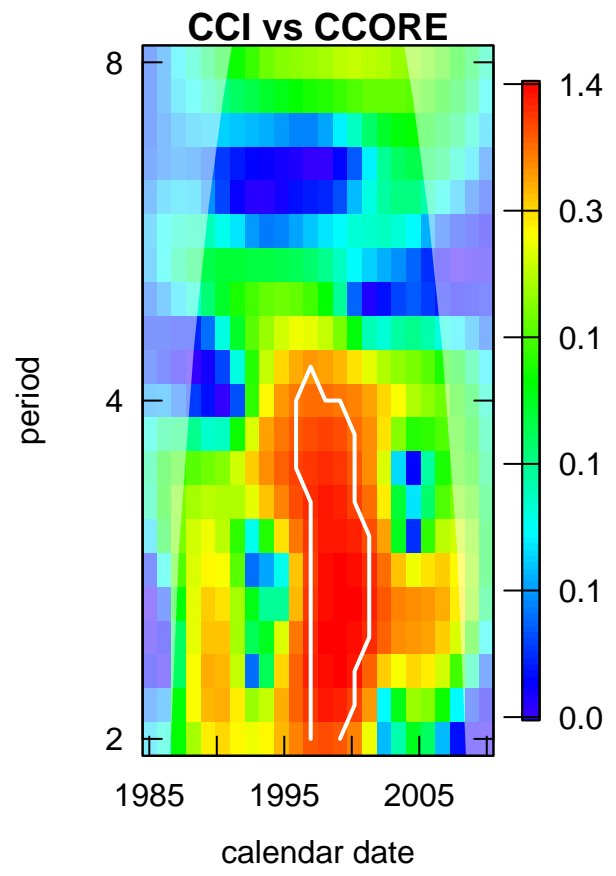
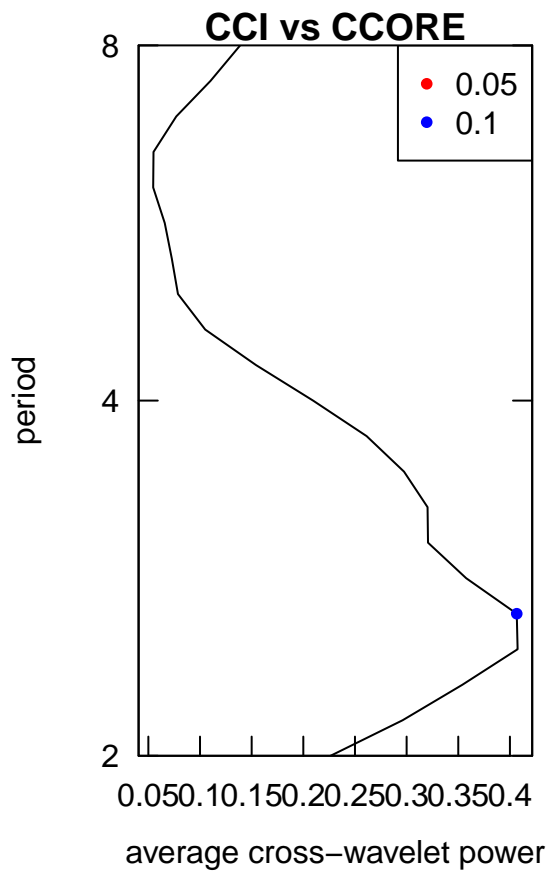


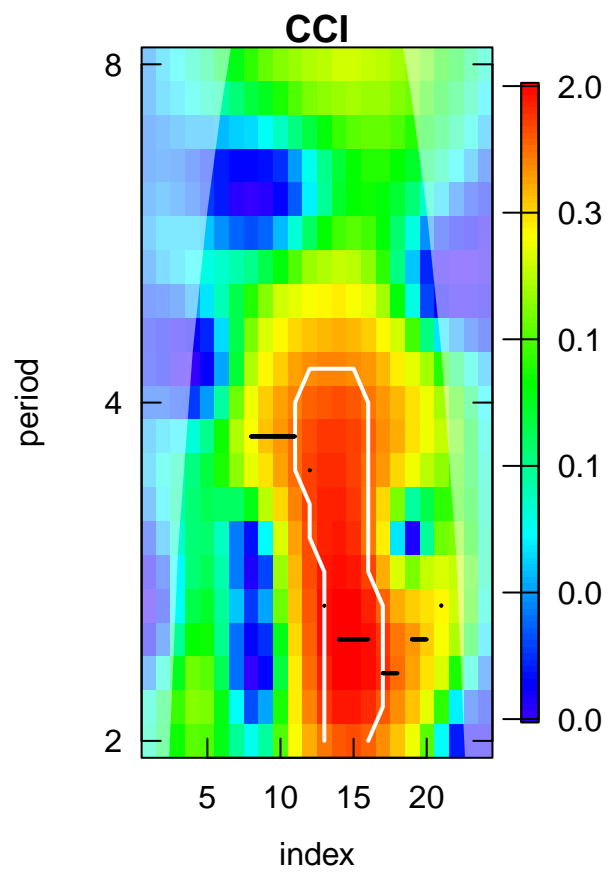


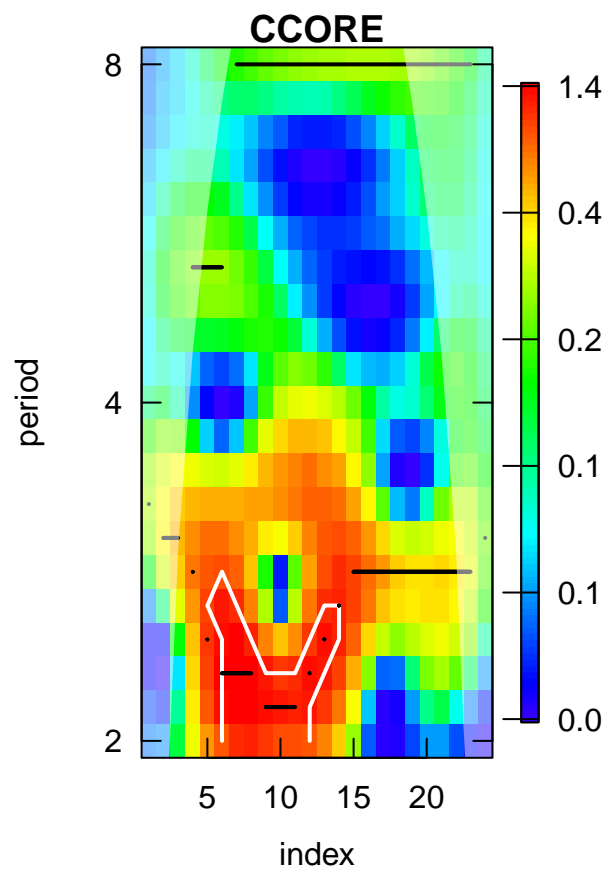


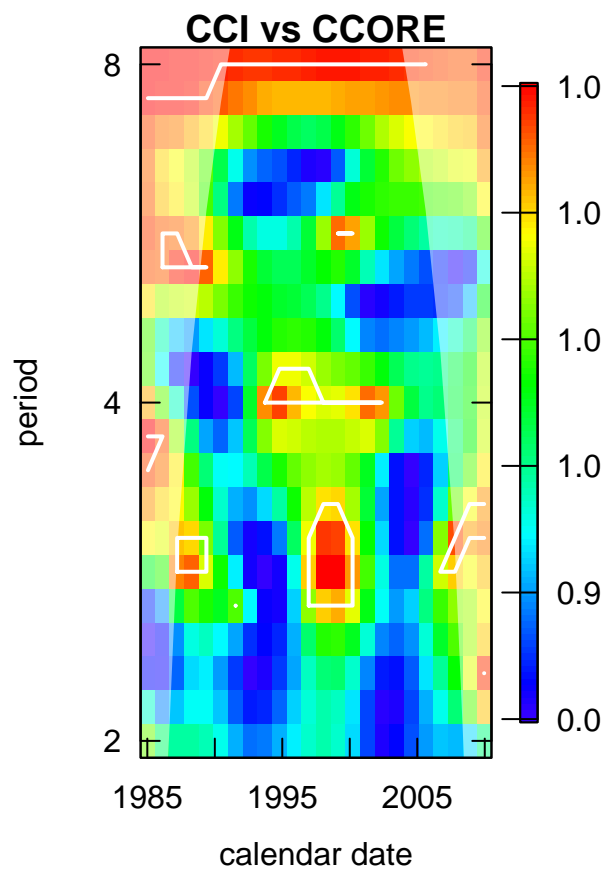
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## Starting wavelet transformation and coherency computation...  
## ... and simulations...  
## |
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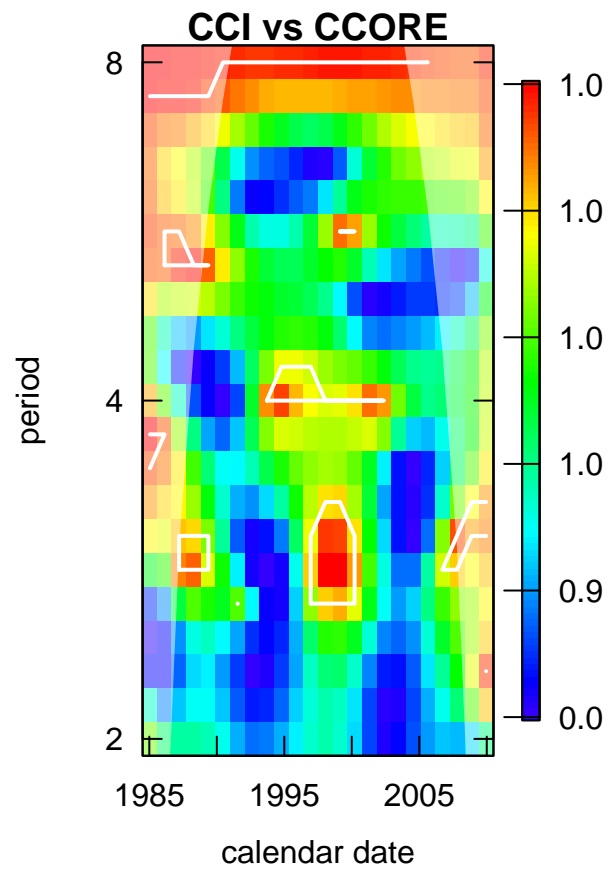
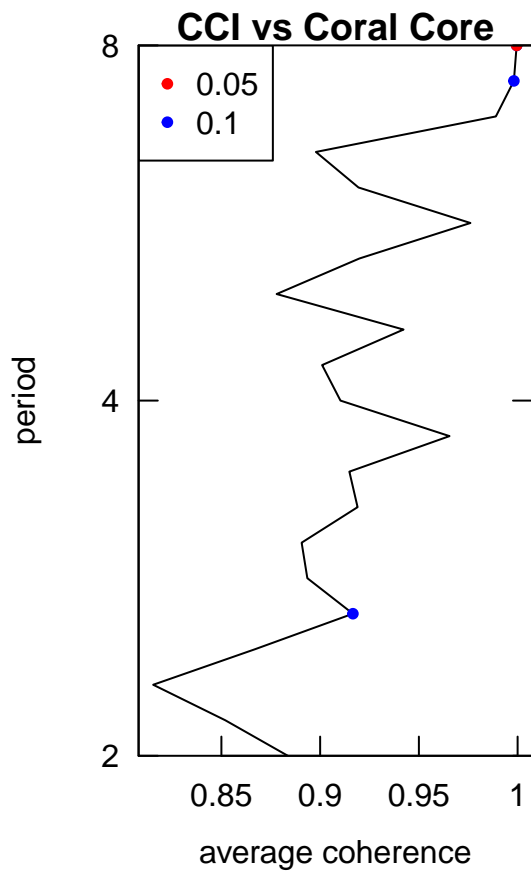
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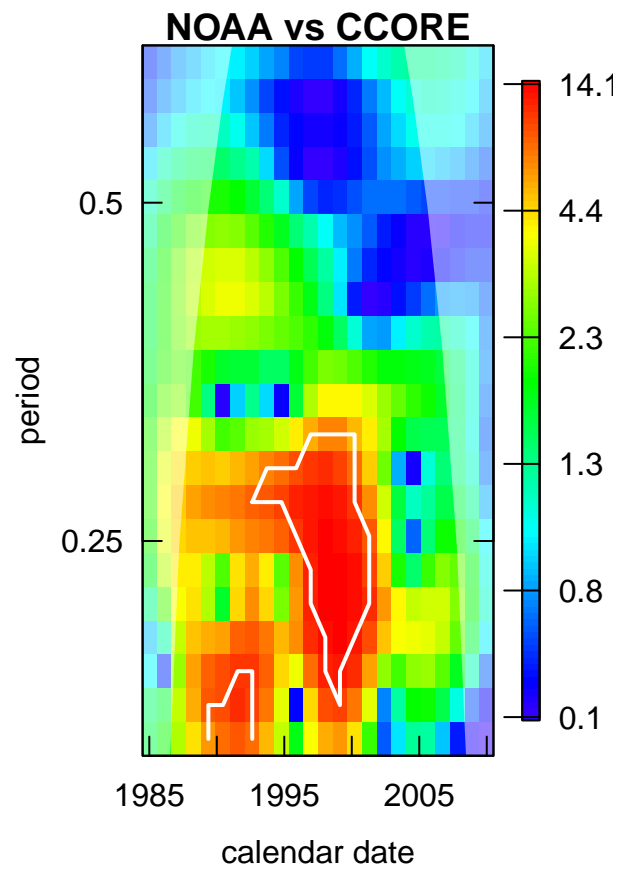
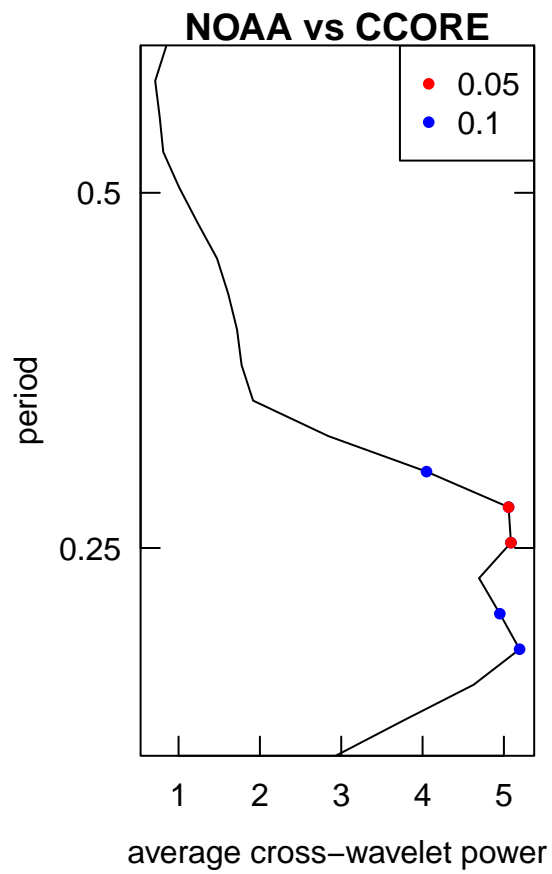


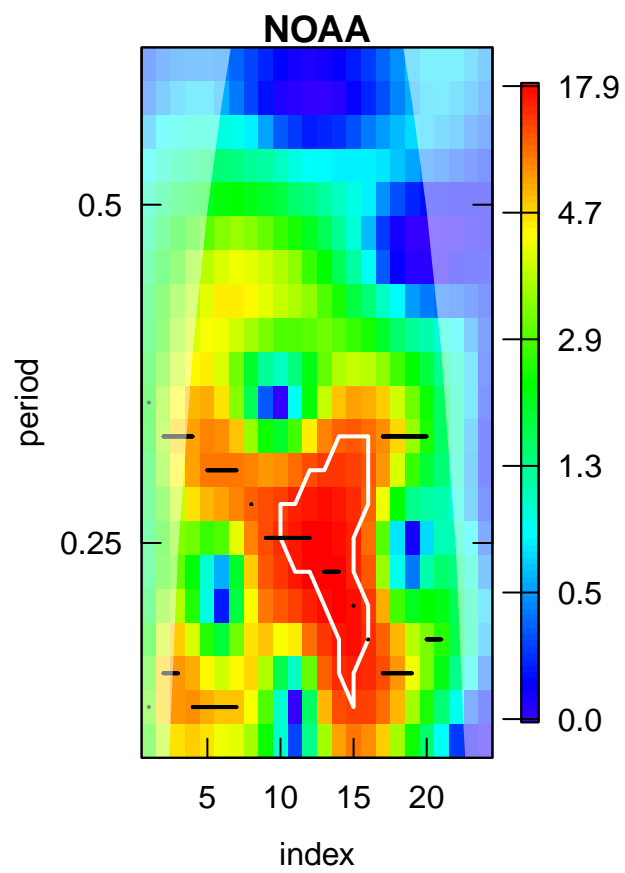


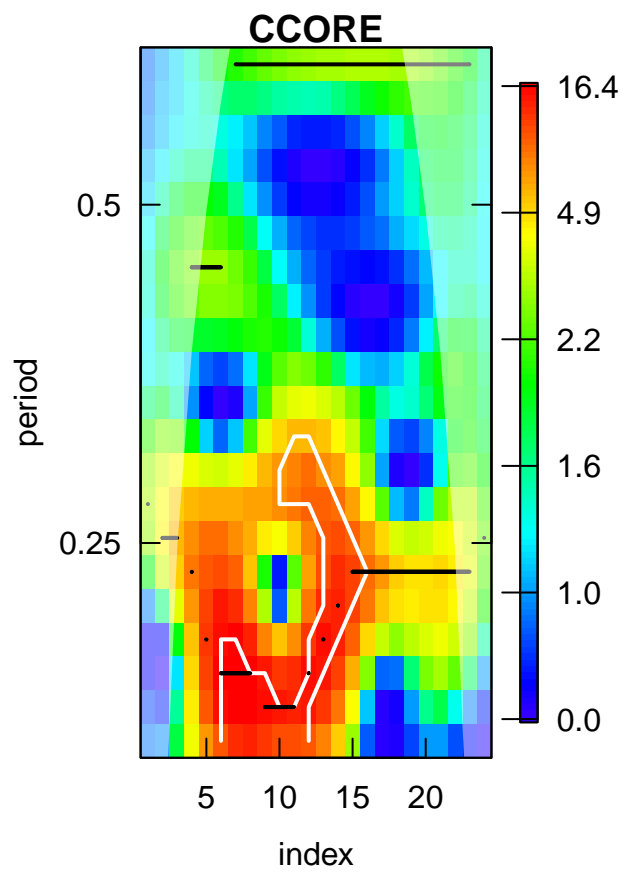


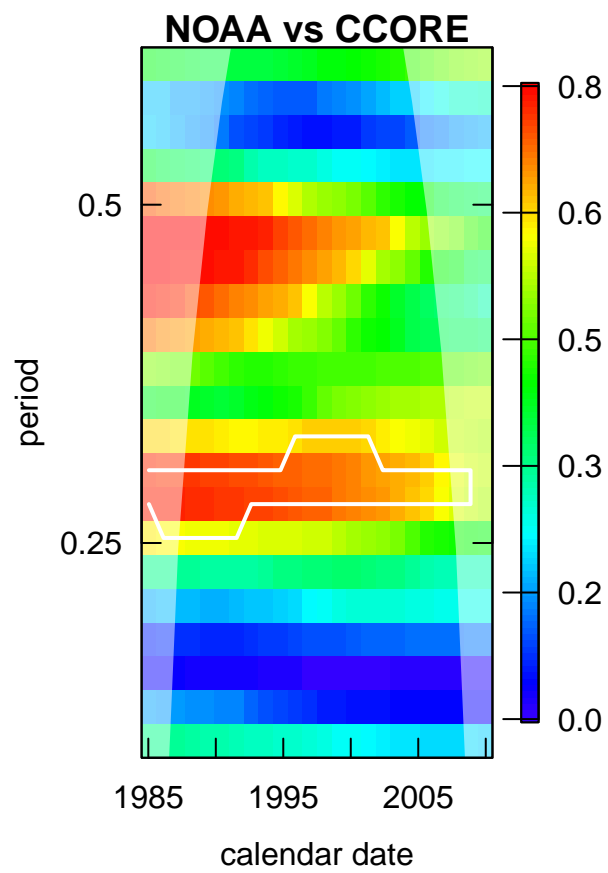
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## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
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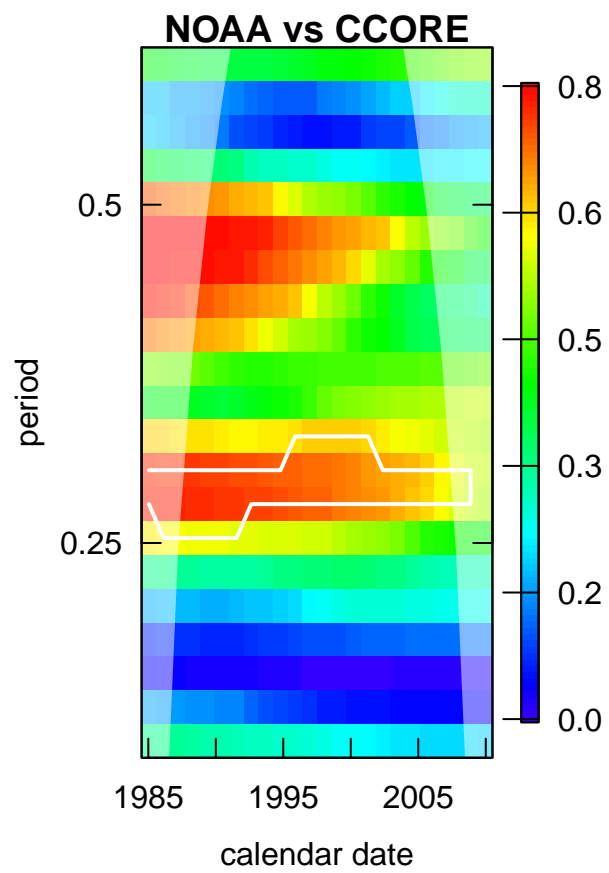
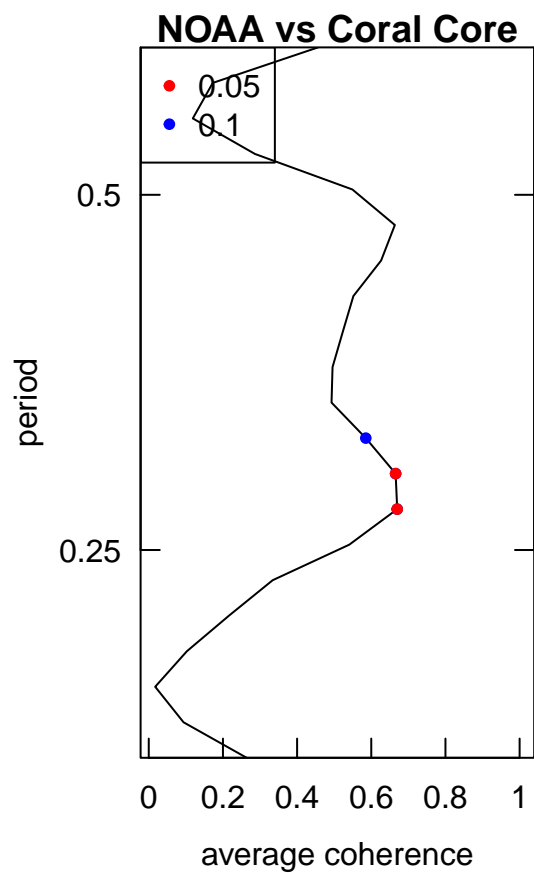
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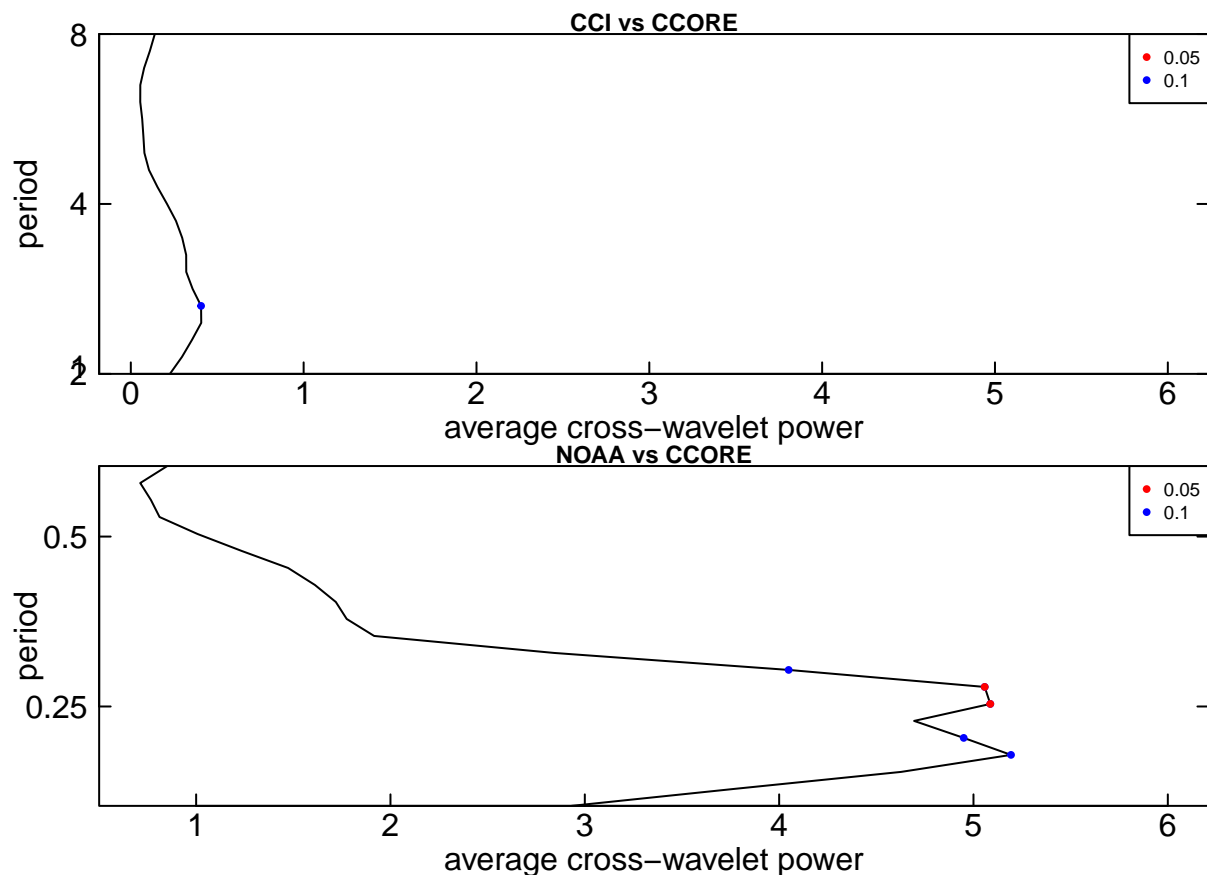


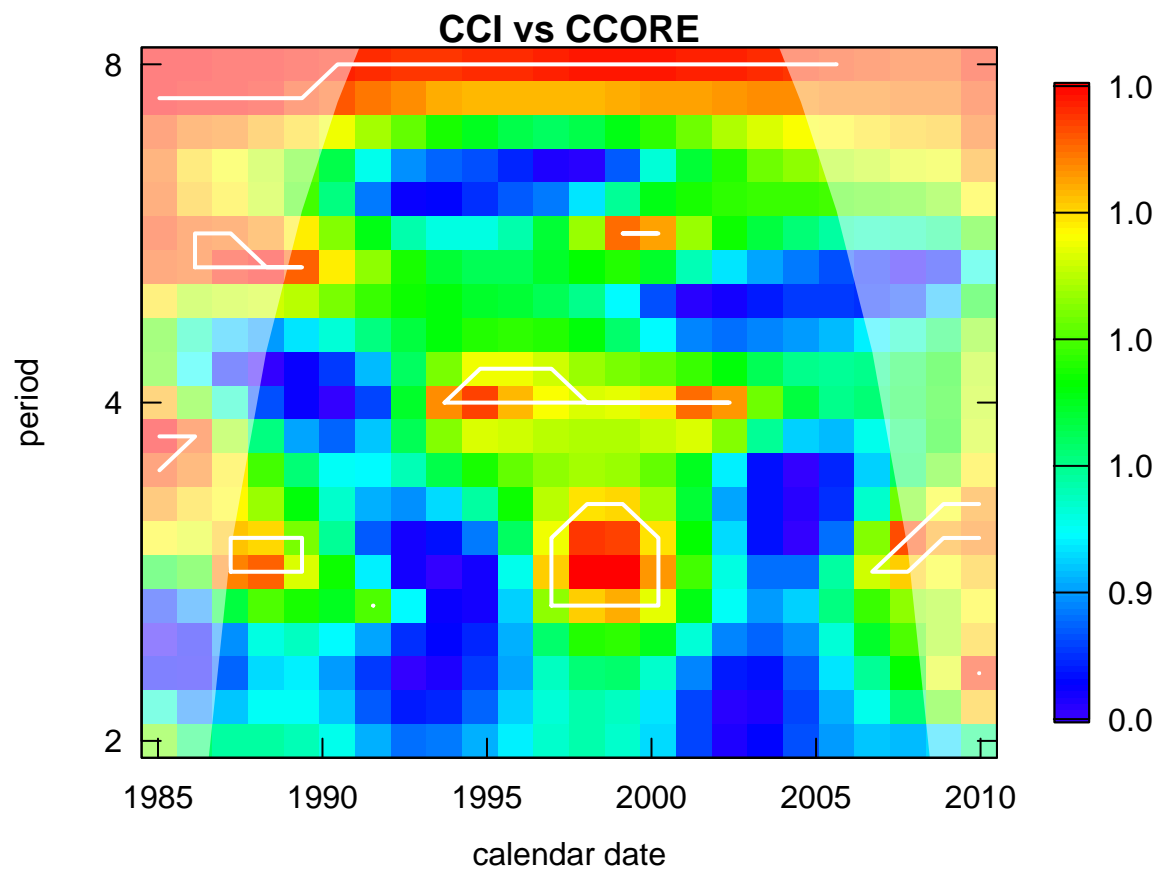


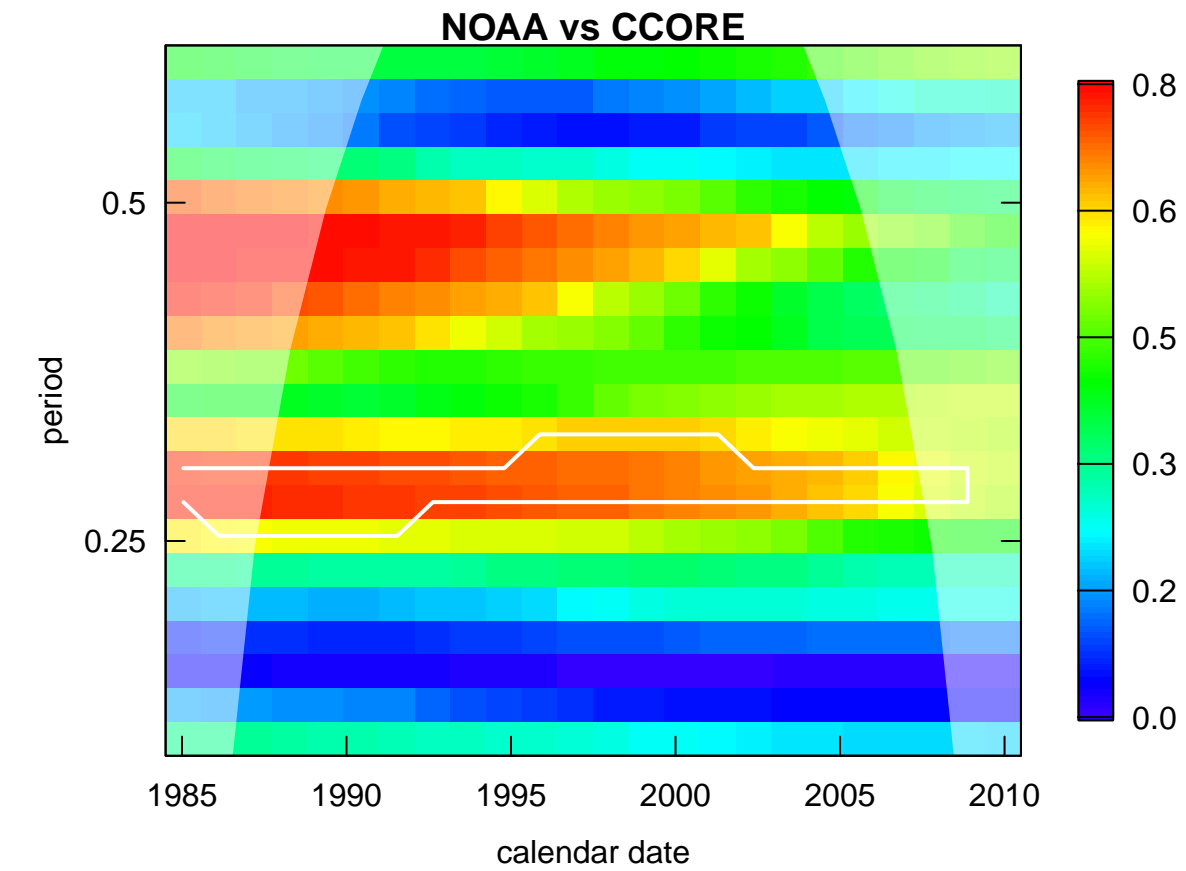












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