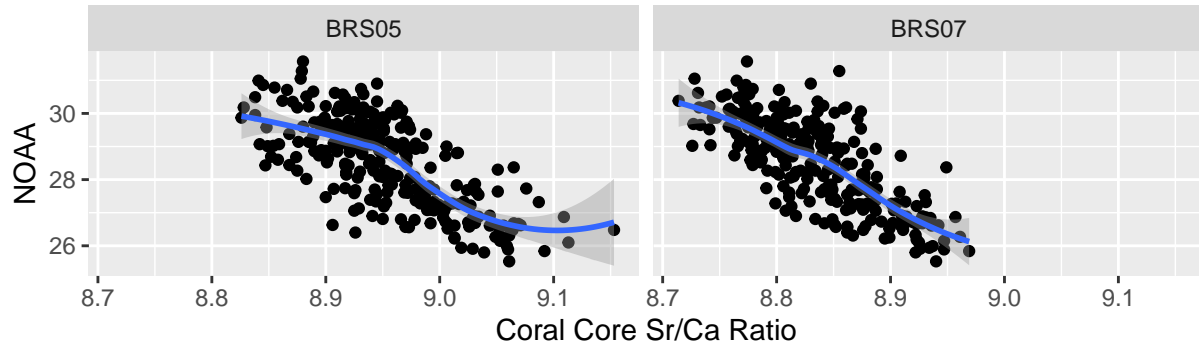


# Coral Core Calibration and Frequency Analysis

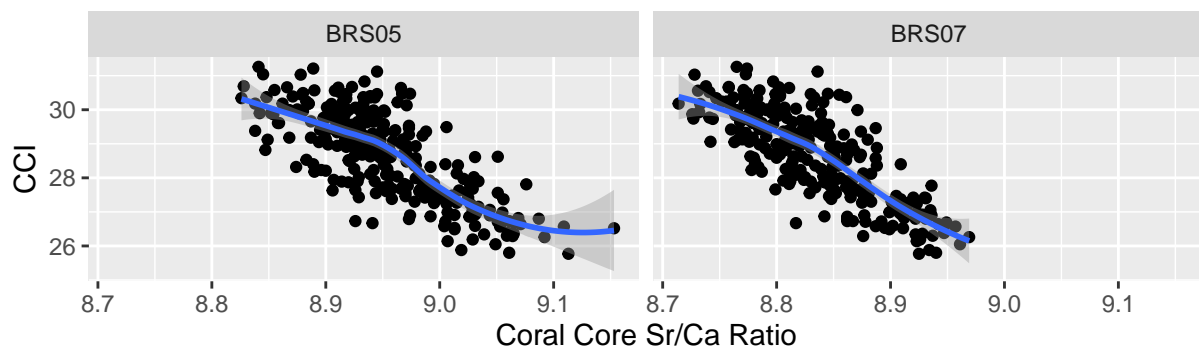
Vanessa Hui Fen Neo

2021-12-01

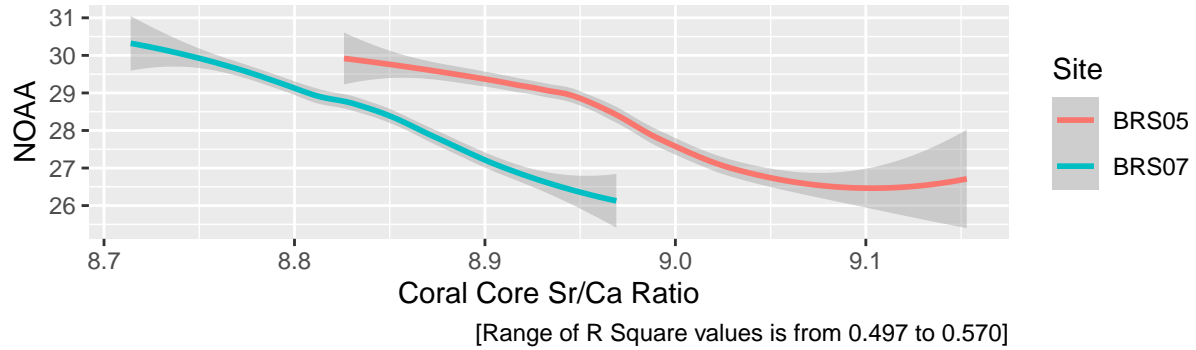
Browse Island NOAA SST and Coral Core Proxy



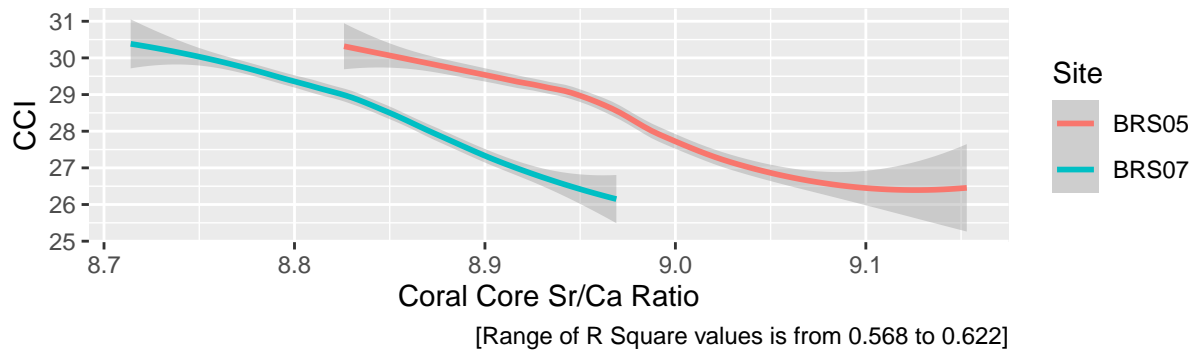
Browse Island CCI SST and Coral Core Proxy



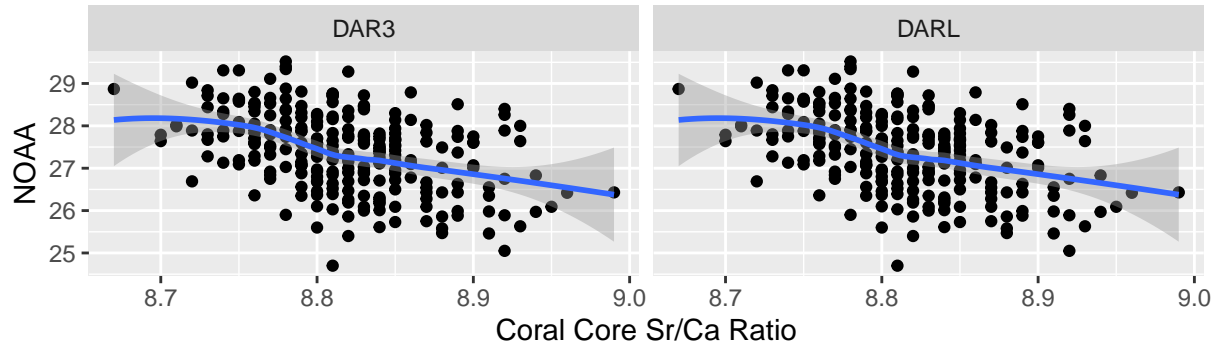
Browse Island NOAA SST and Coral Core Proxy



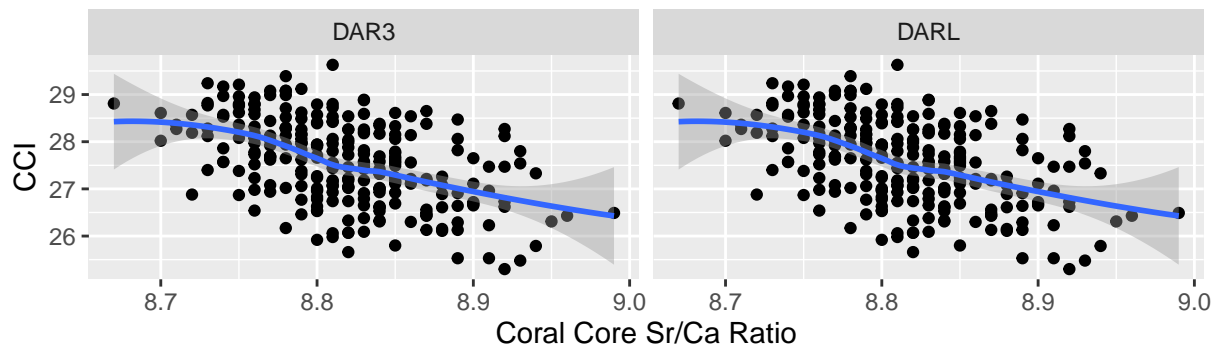
Browse Island CCI SST and Coral Core Proxy

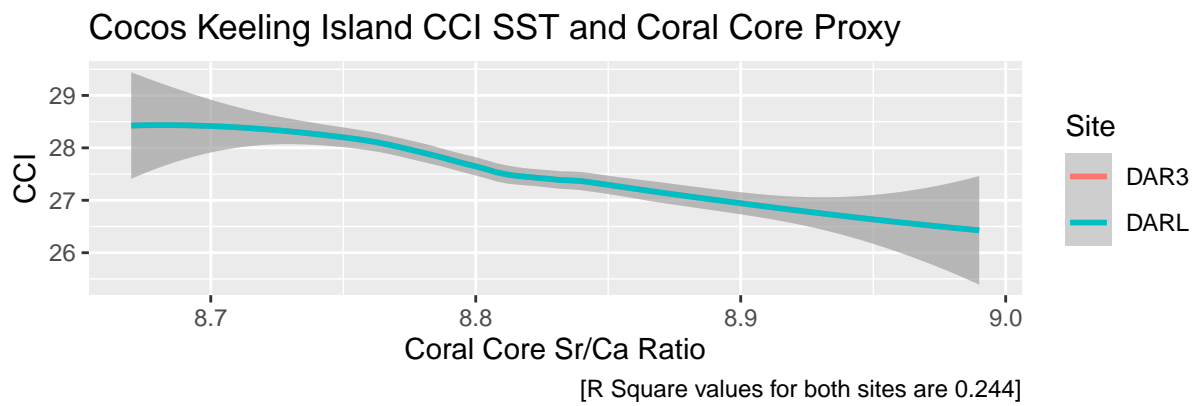
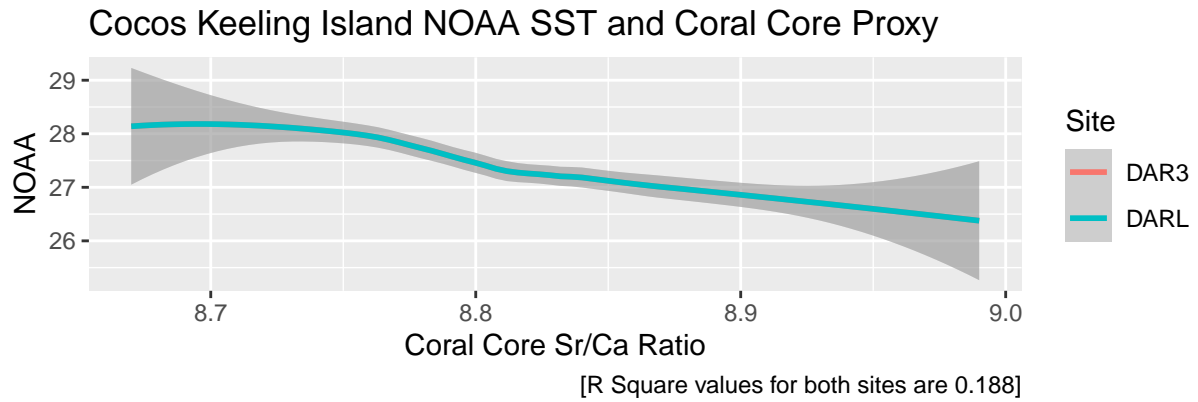


### Cocos Keeling Island NOAA SST and Coral Core Proxy

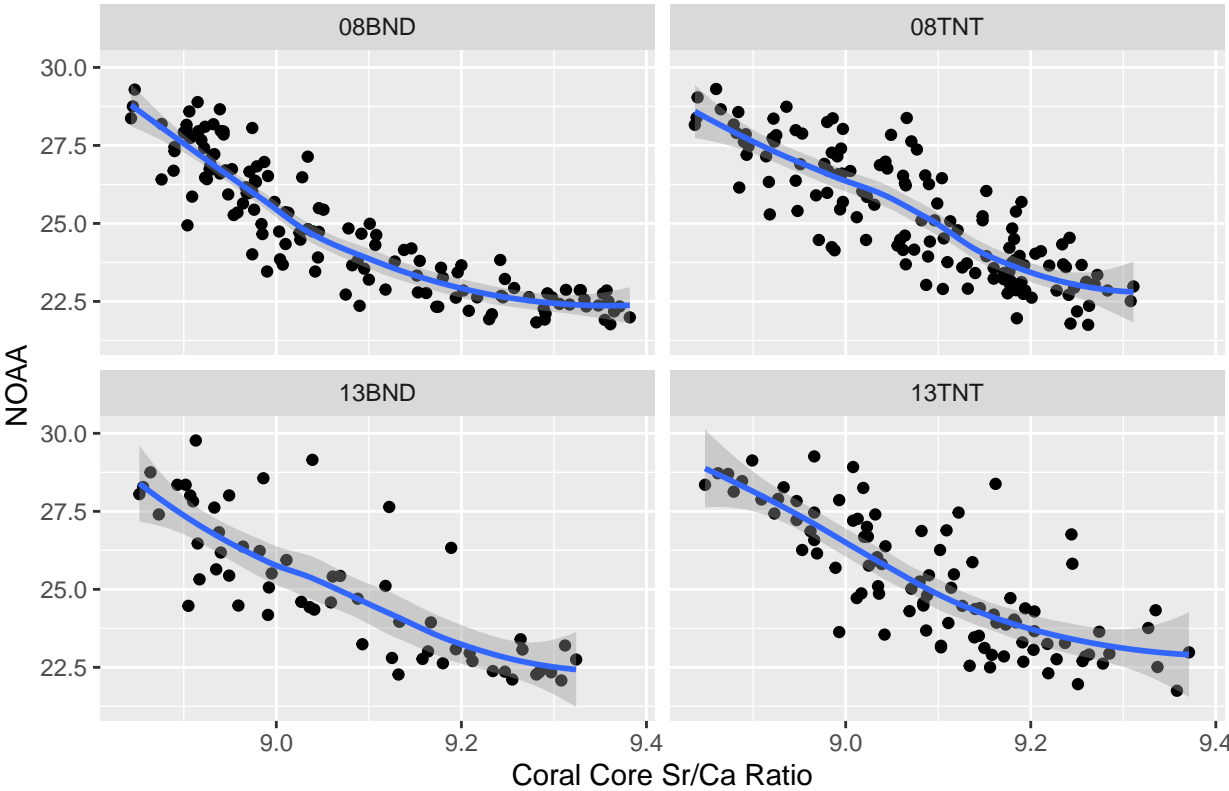


### Cocos Keeling Island CCI SST and Coral Core Proxy

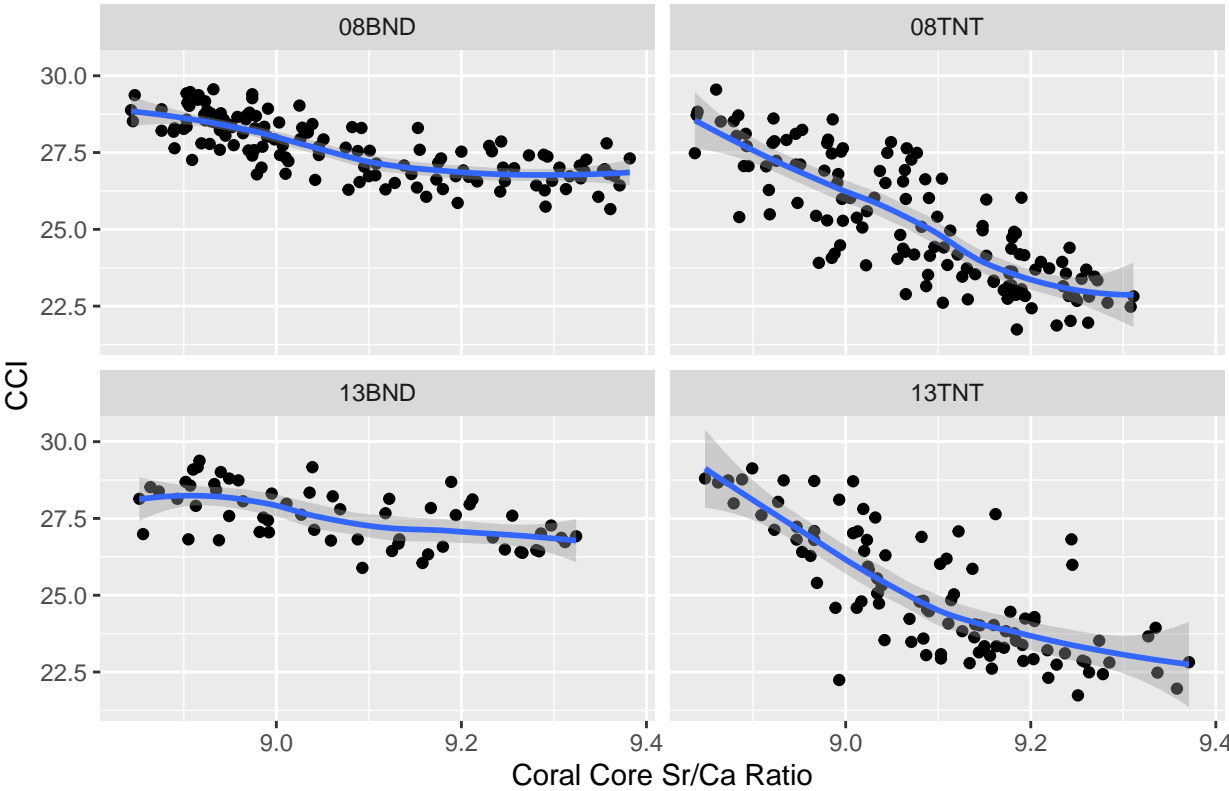




Ningaloo Reef NOAA SST and Coral Core Proxy



Ningaloo Reef CCI SST and Coral Core Proxy



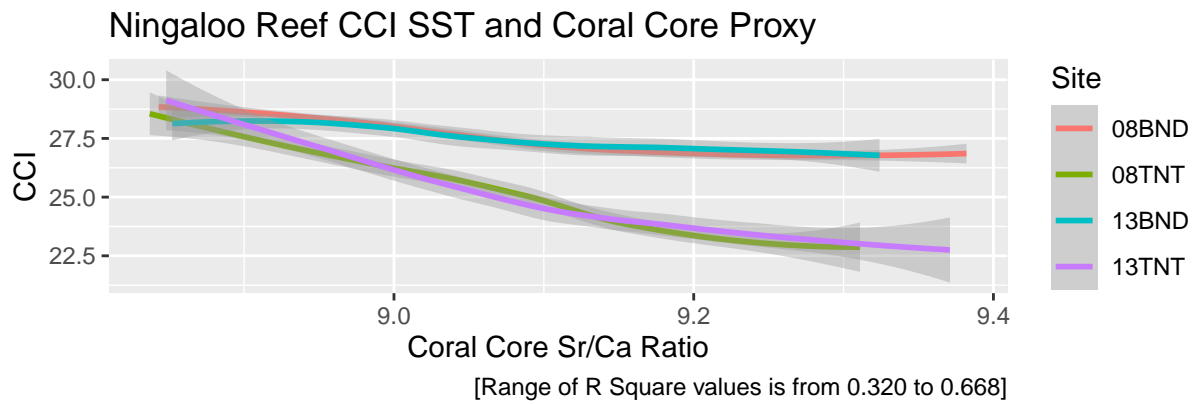
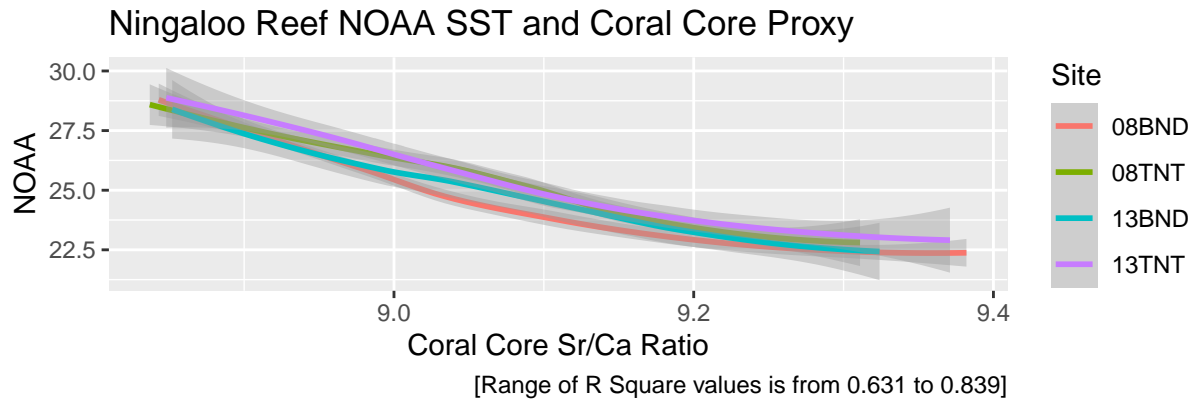




Table 1: NOAA

	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

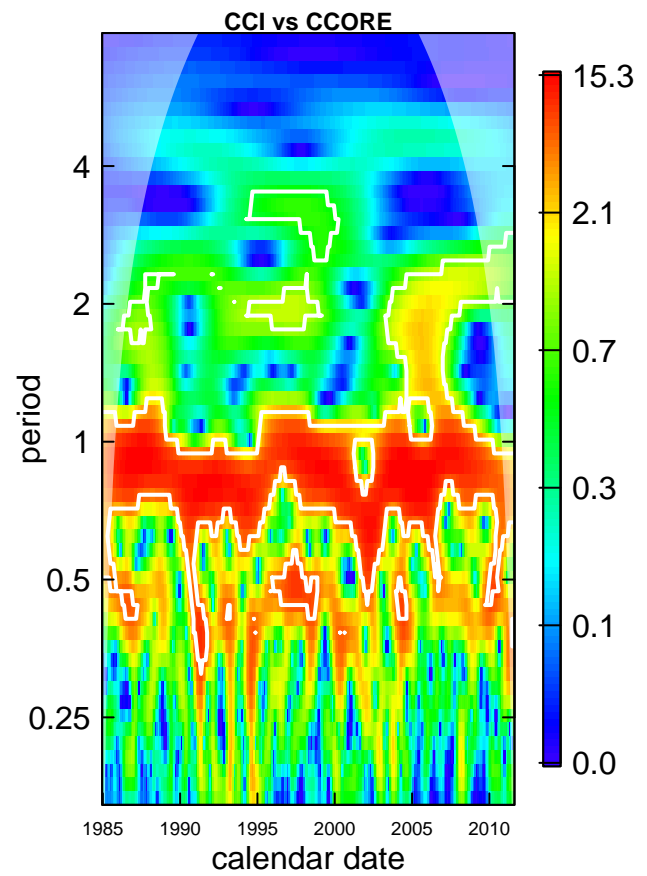
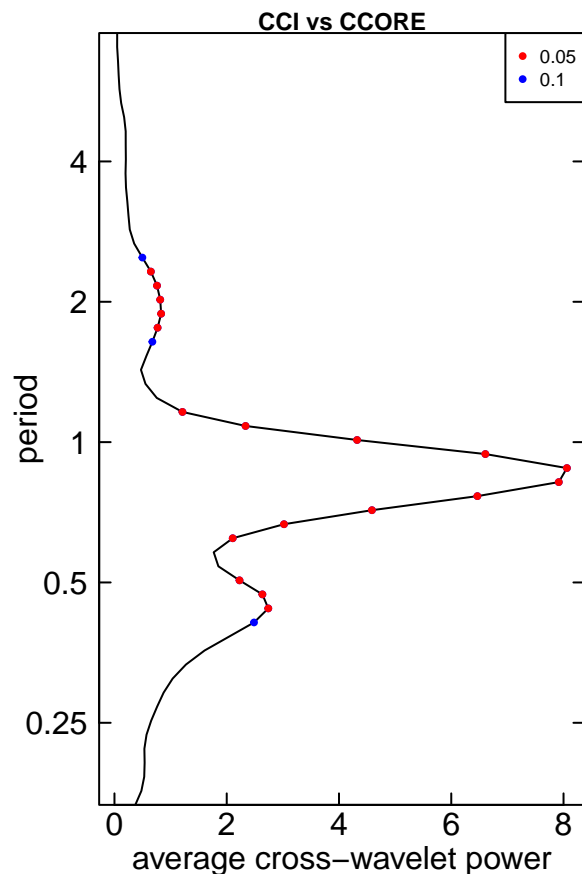
## Frequency Analysis - Spectral Analysis of Time Series for Sr/Ca Coral Proxy sites

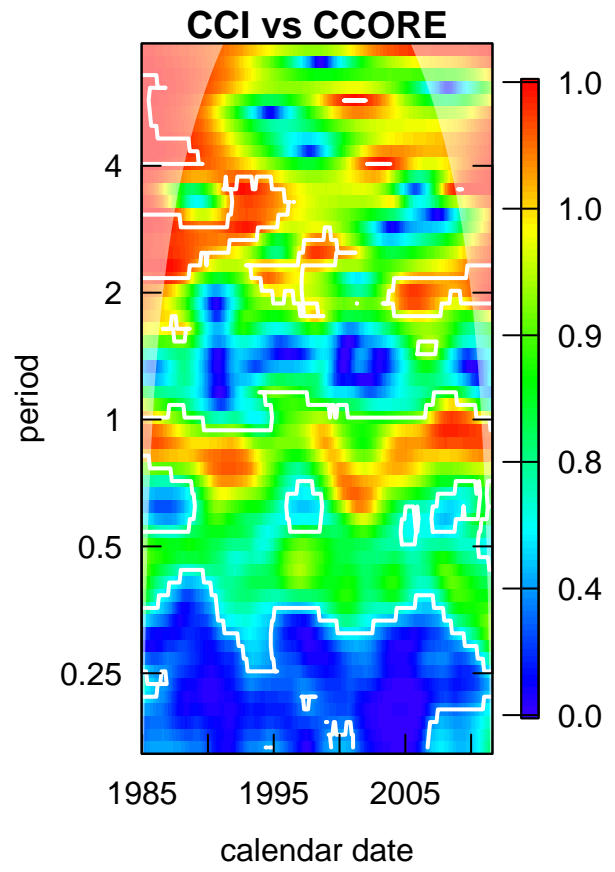
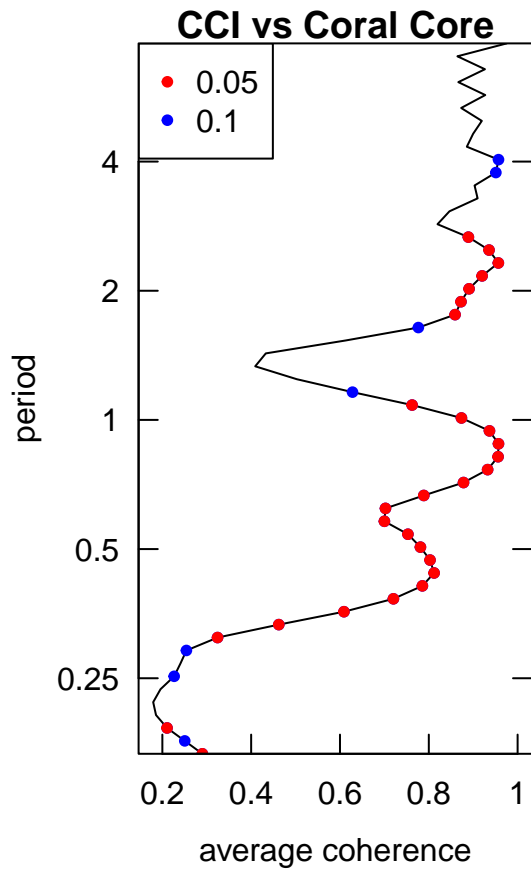
Monthly Coral Core Proxy Sites - Period of 1 represents 1 year

BRS05

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

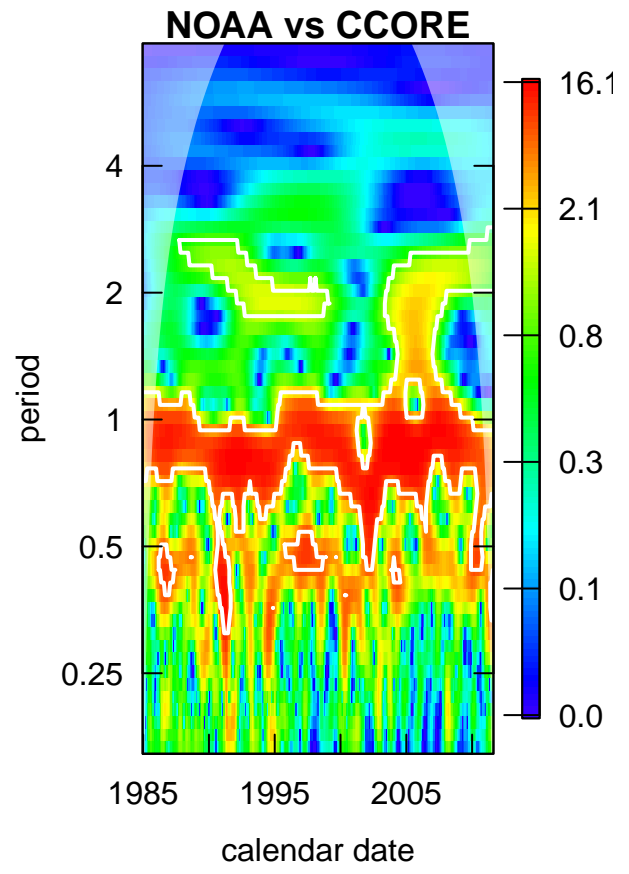
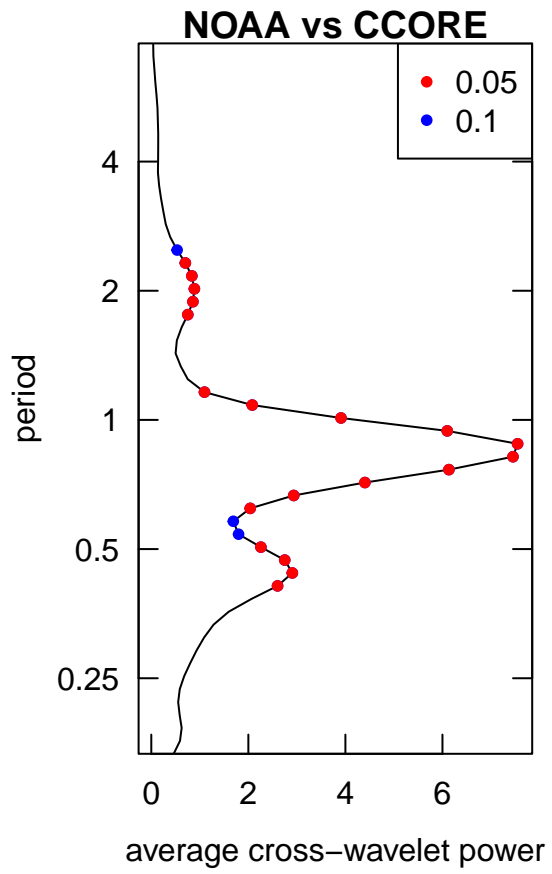
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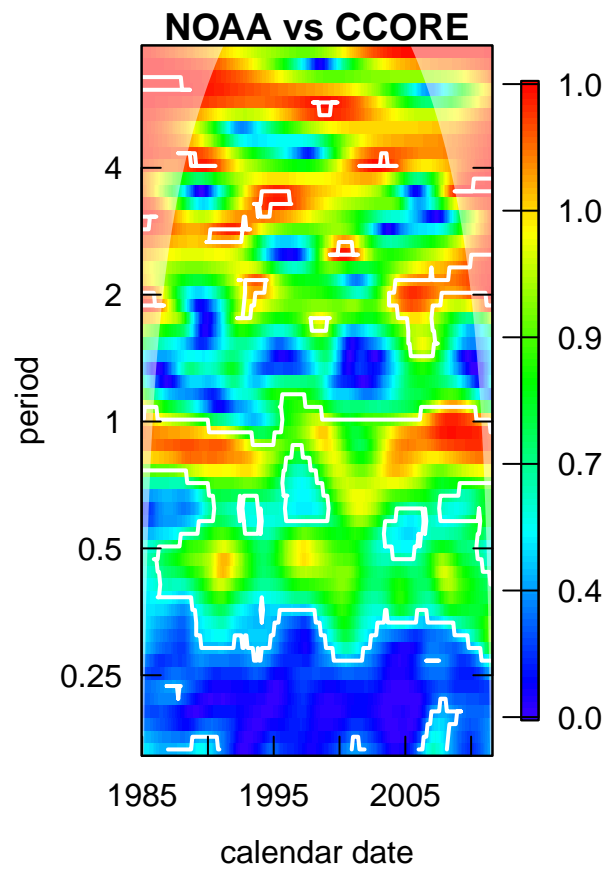
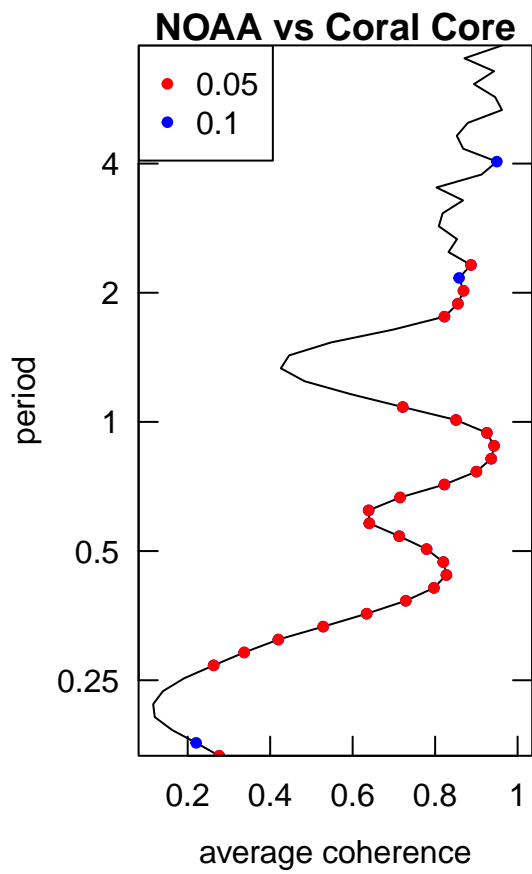


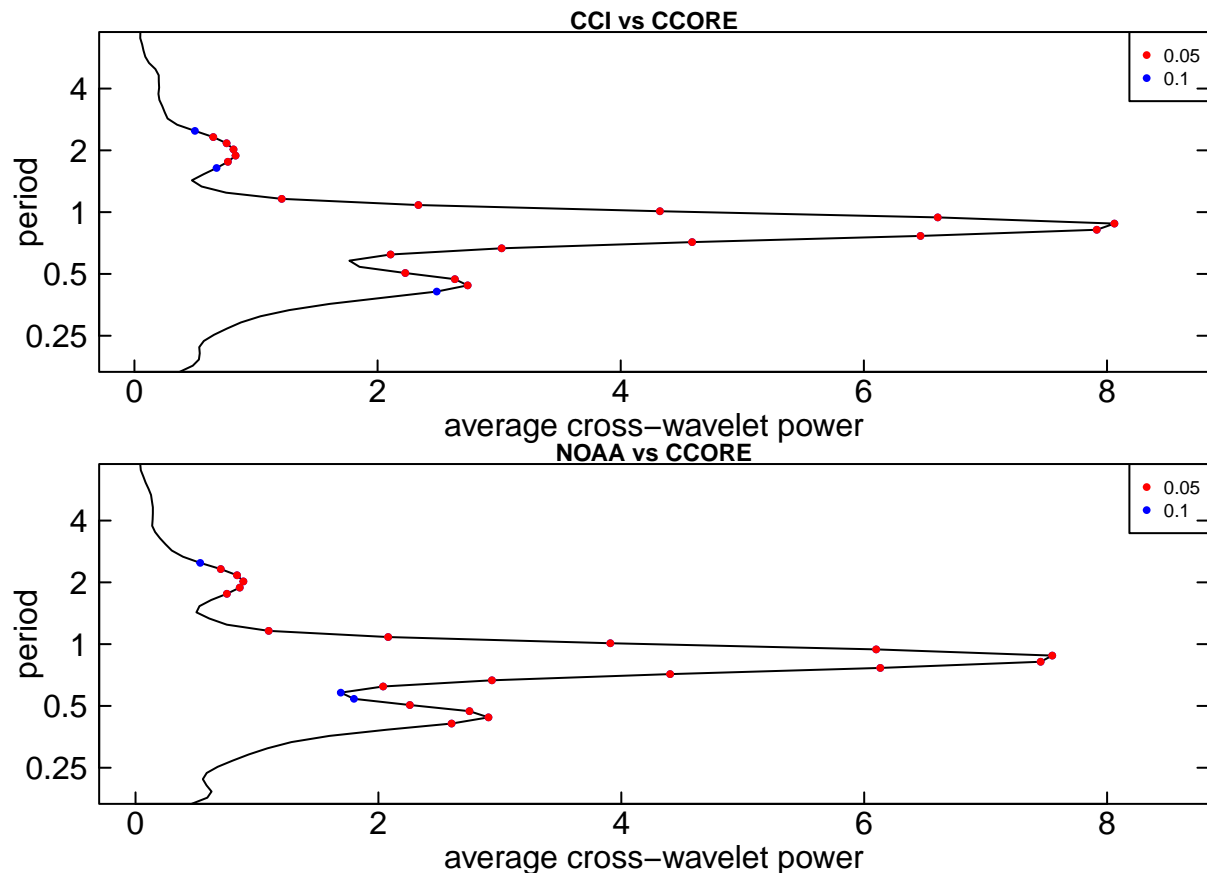


```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

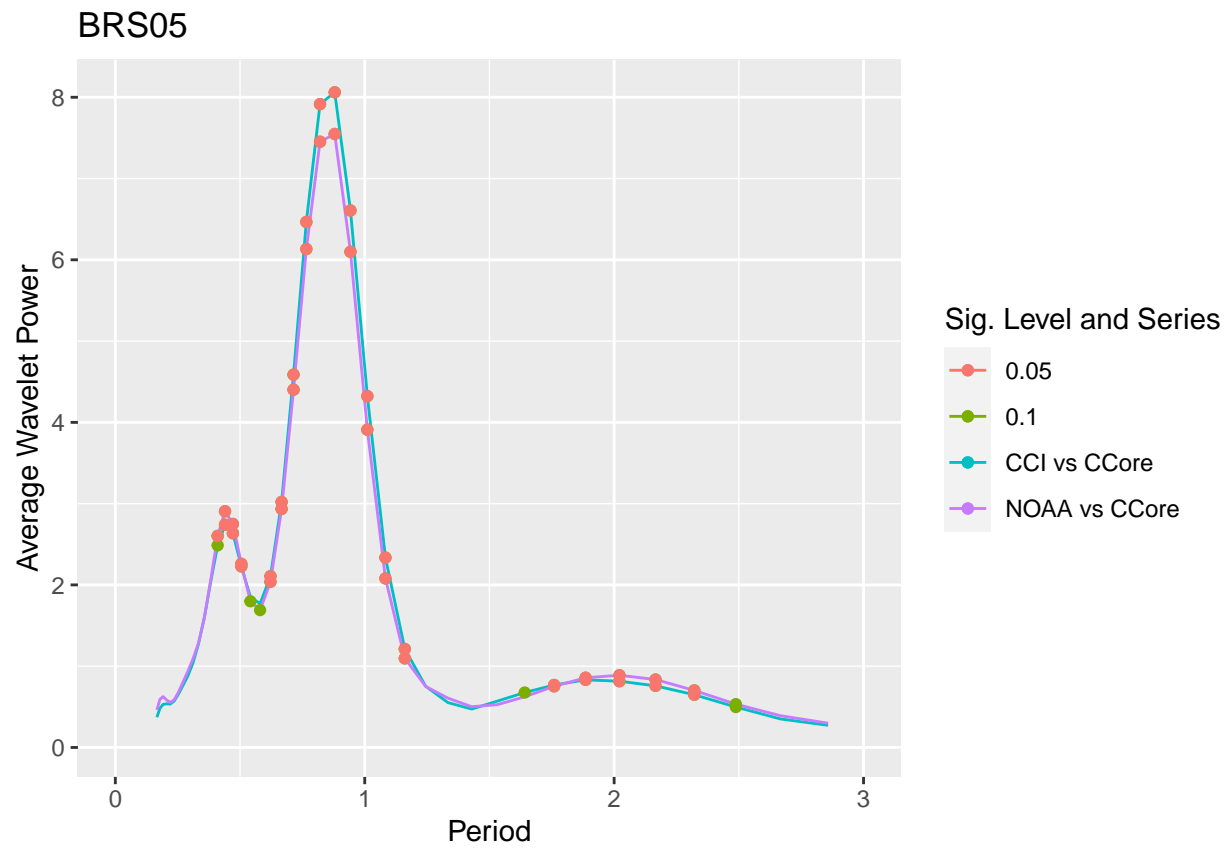
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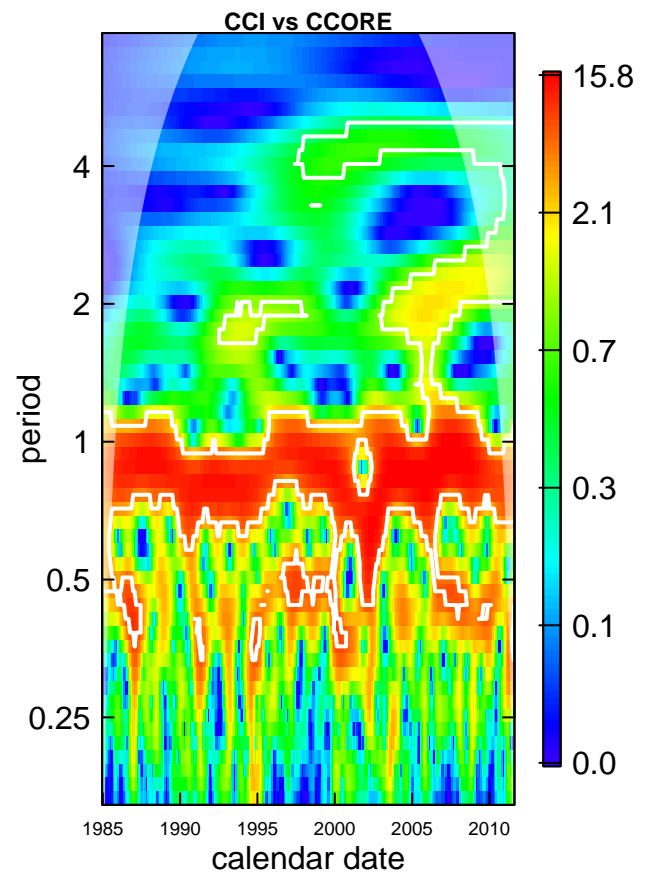
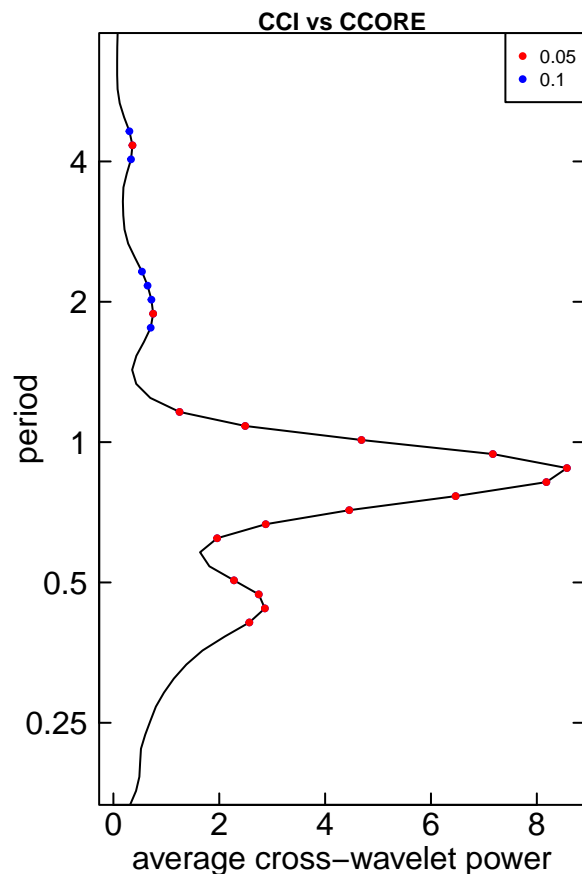


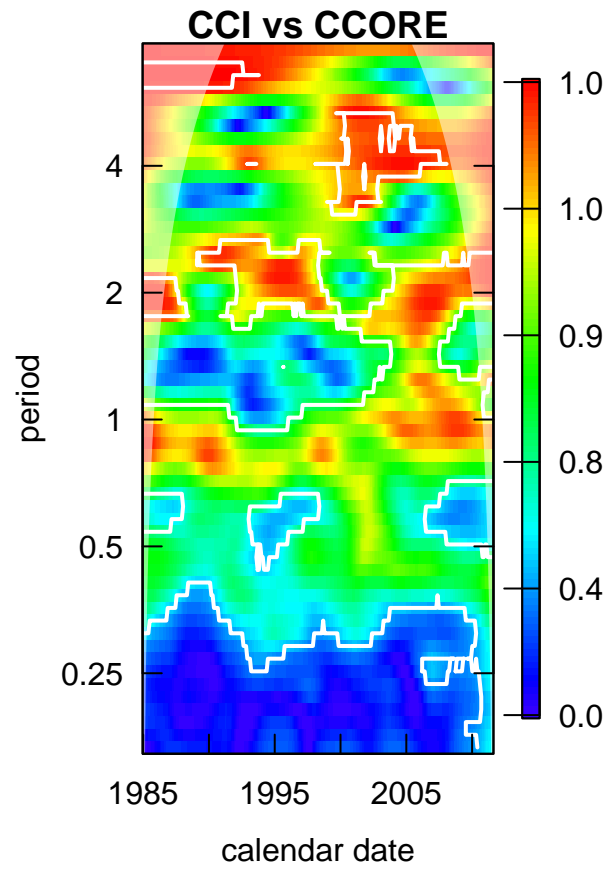
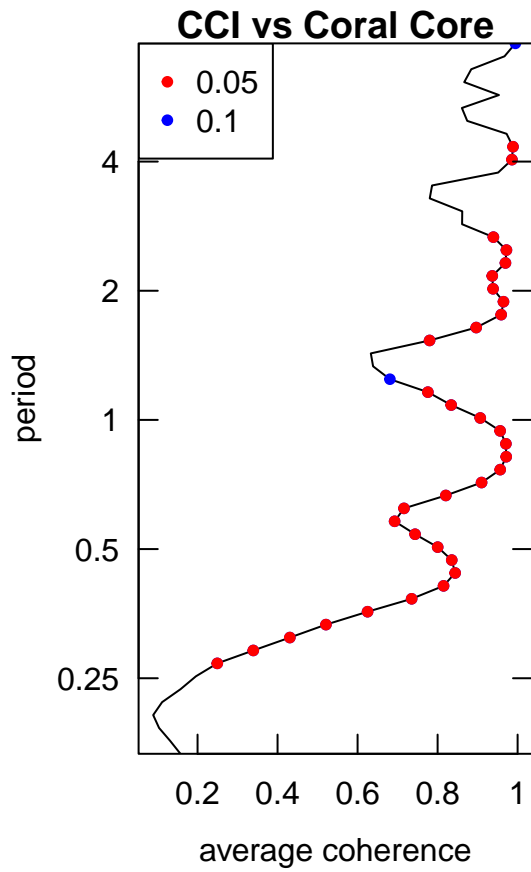


BRS07

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

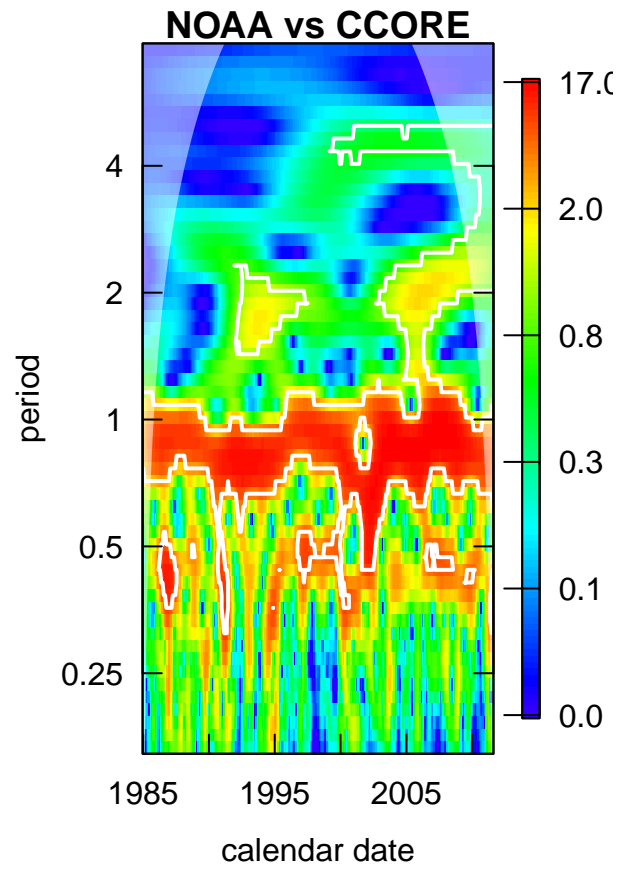
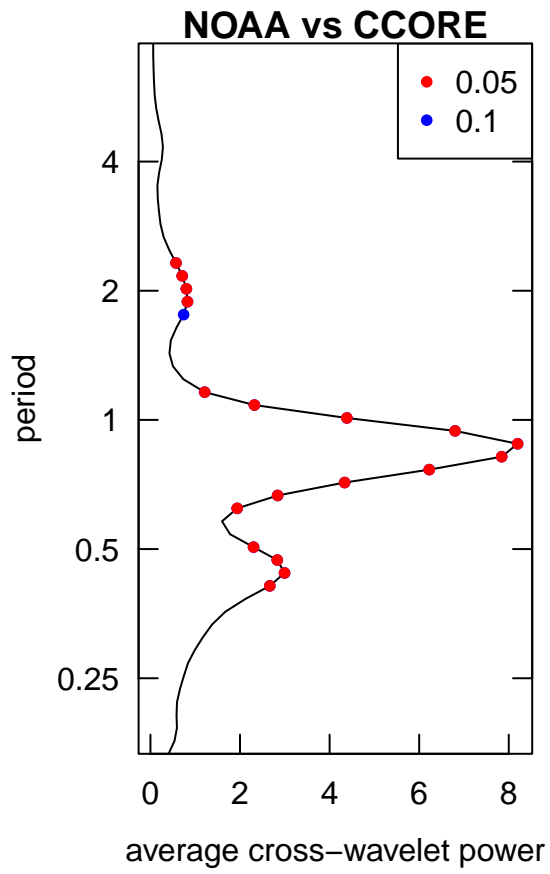
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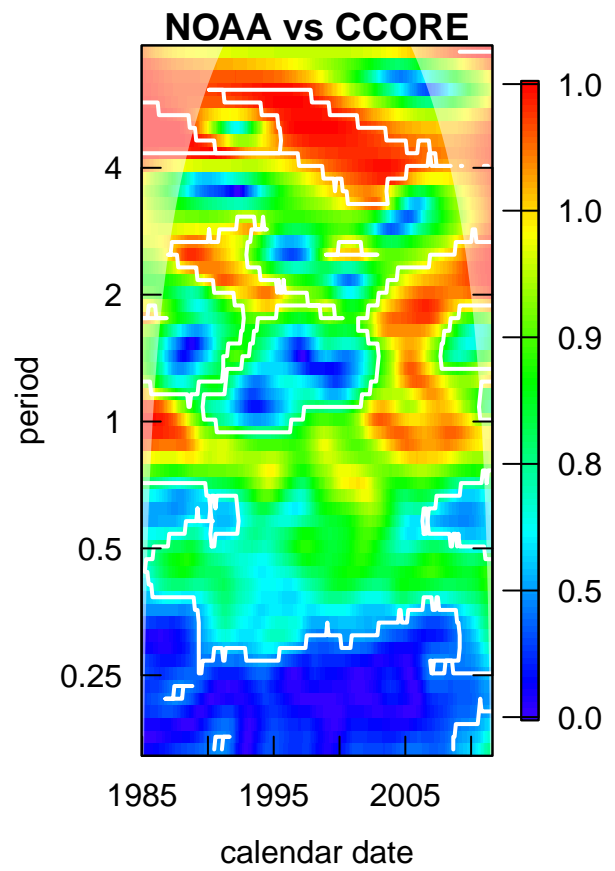
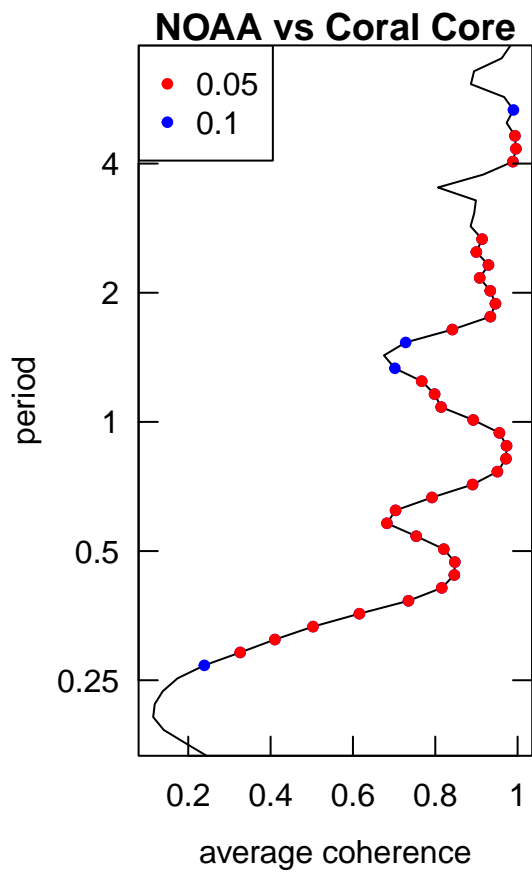


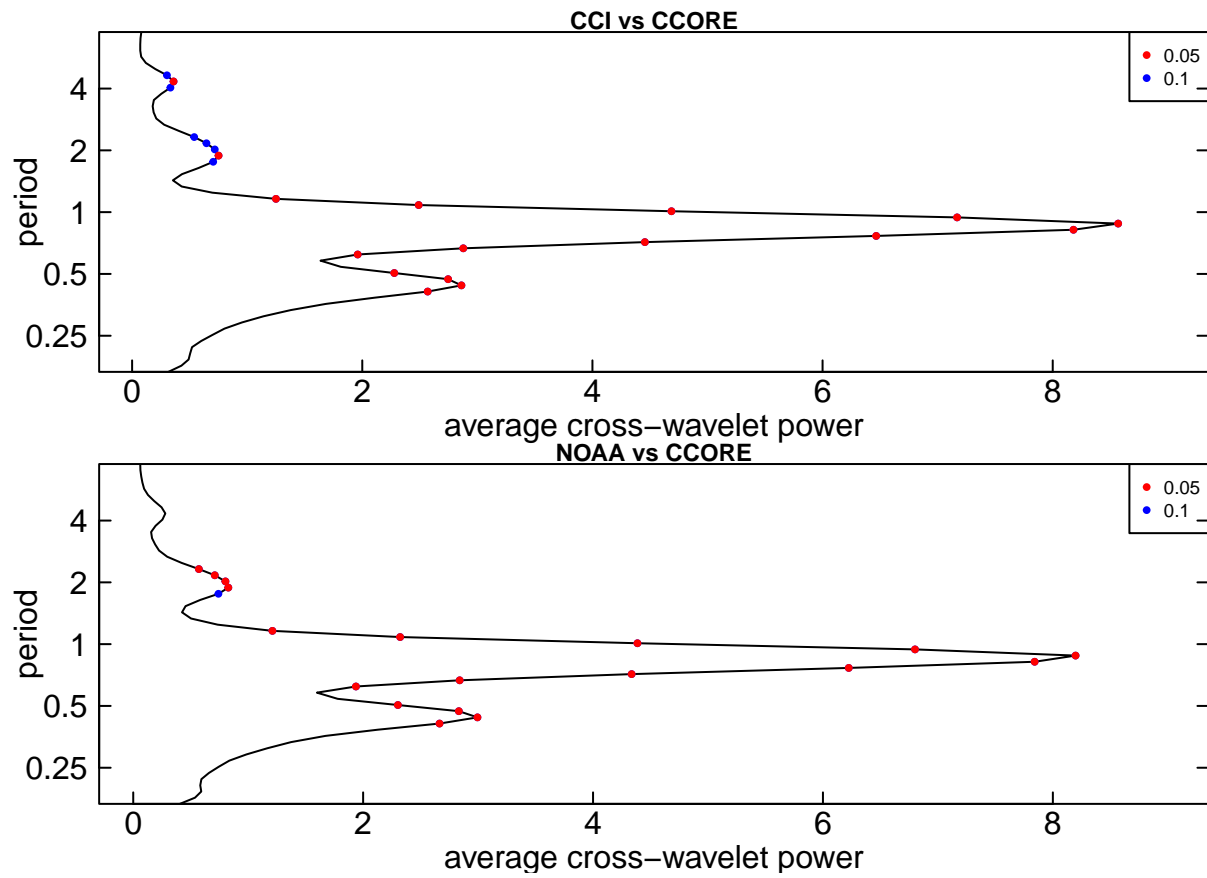


```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

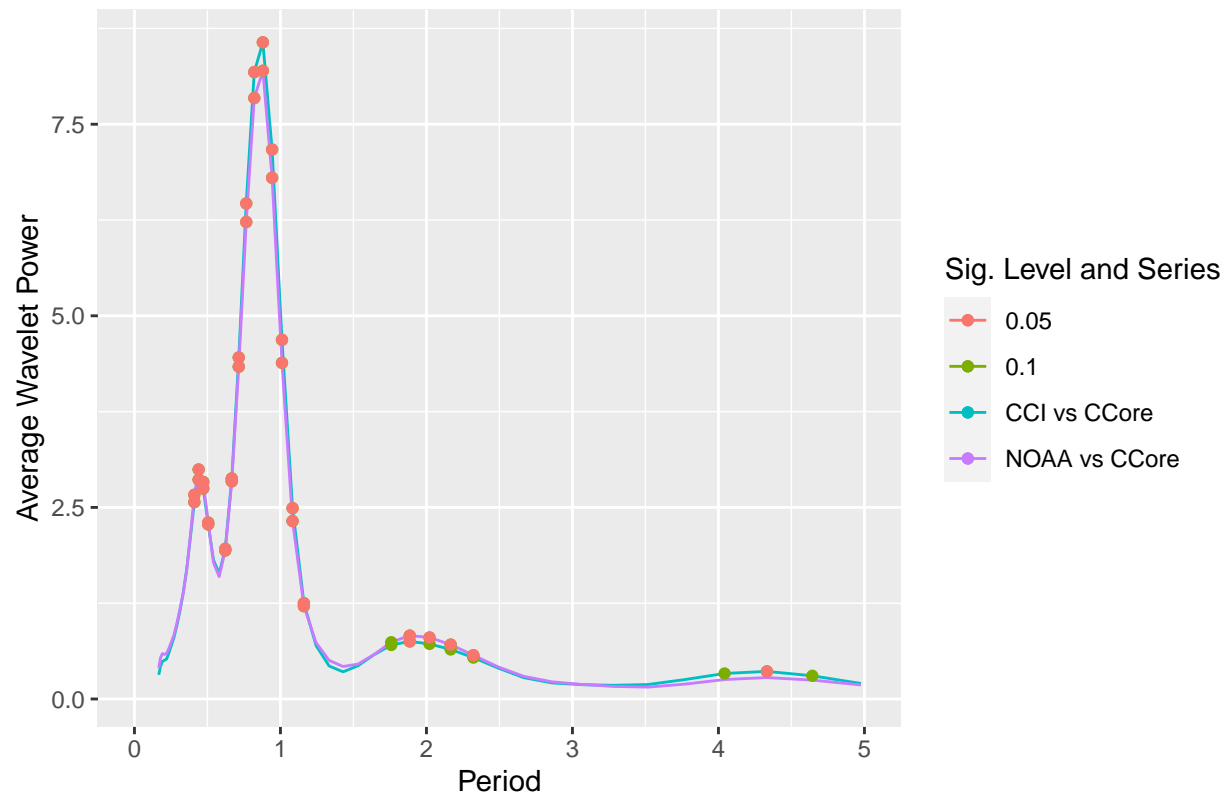
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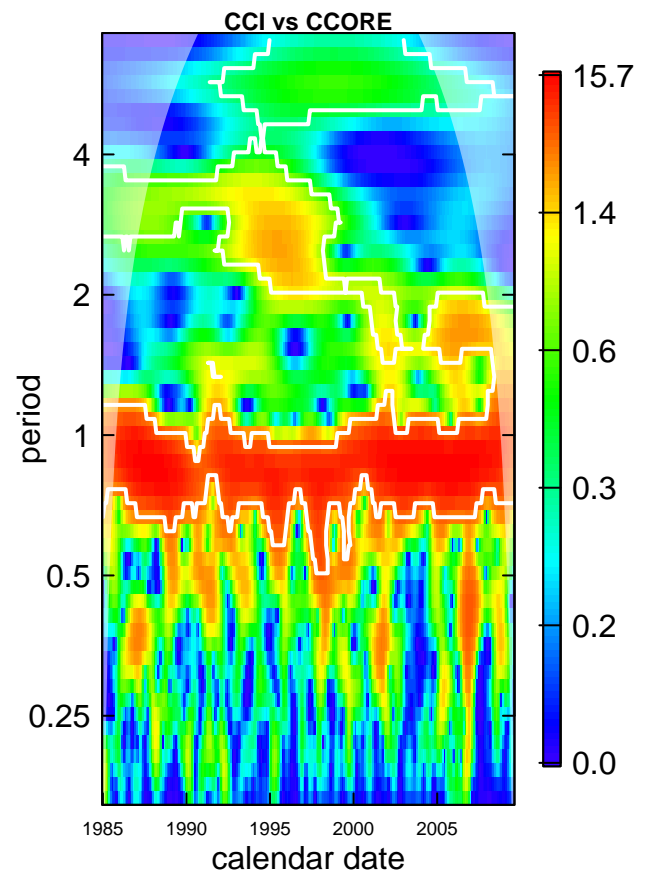
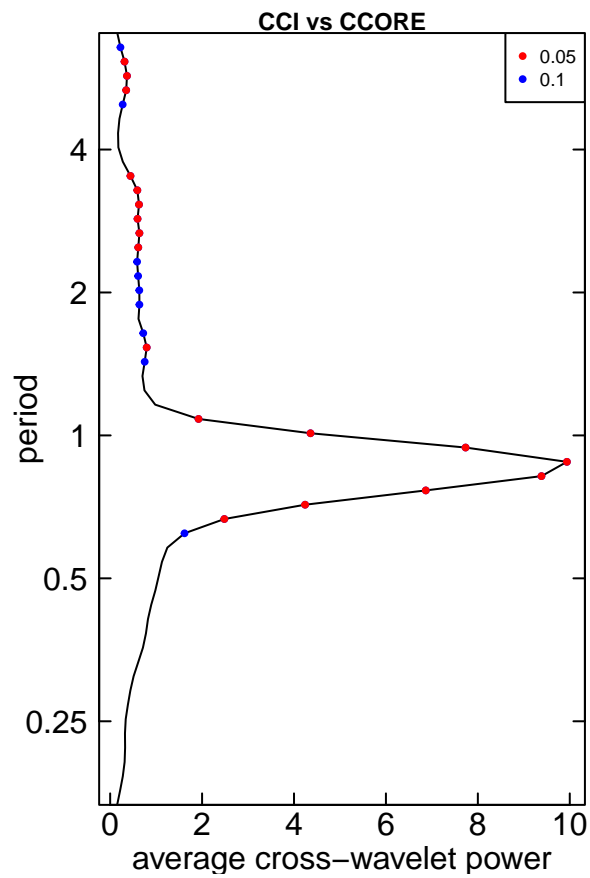
BRS07



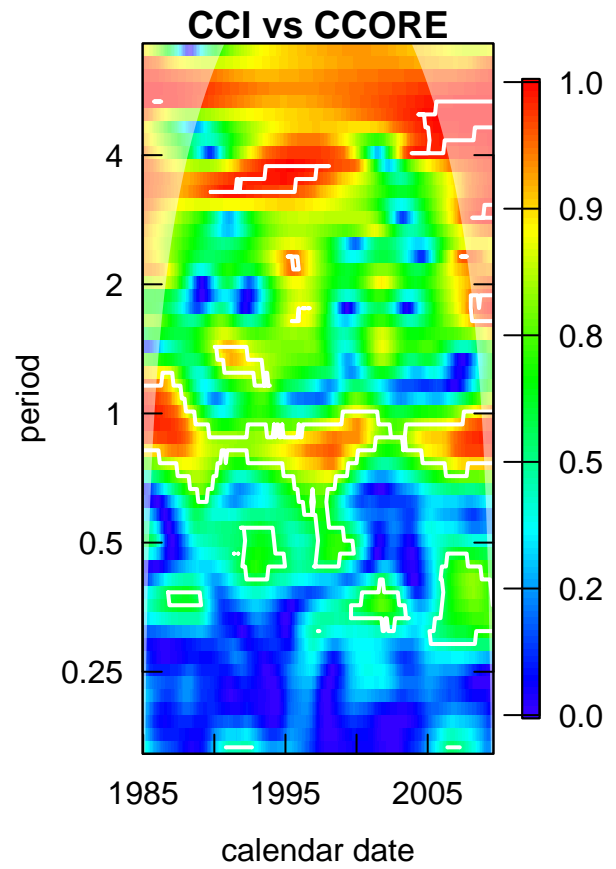
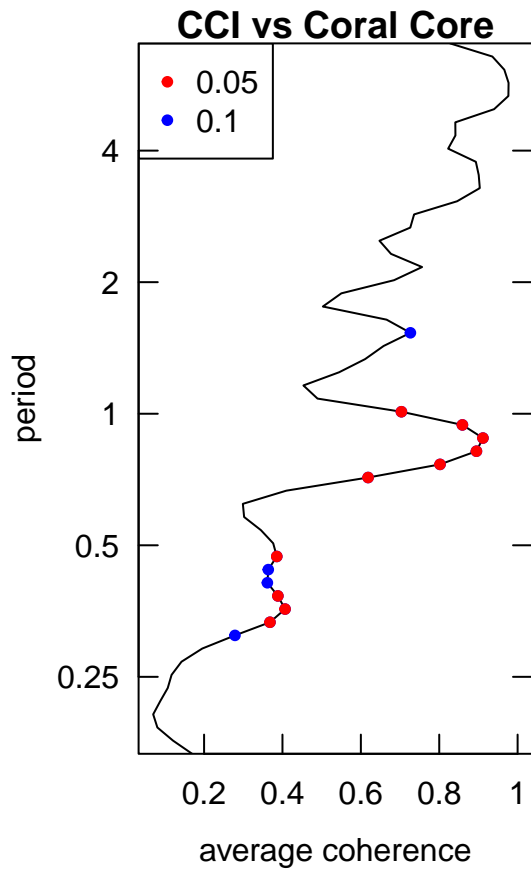
### DAR3

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

|

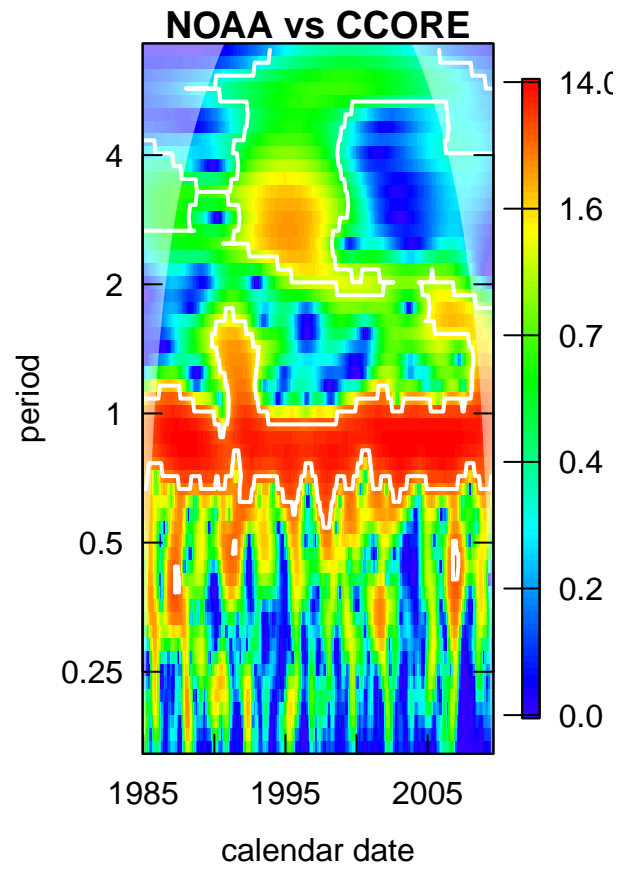
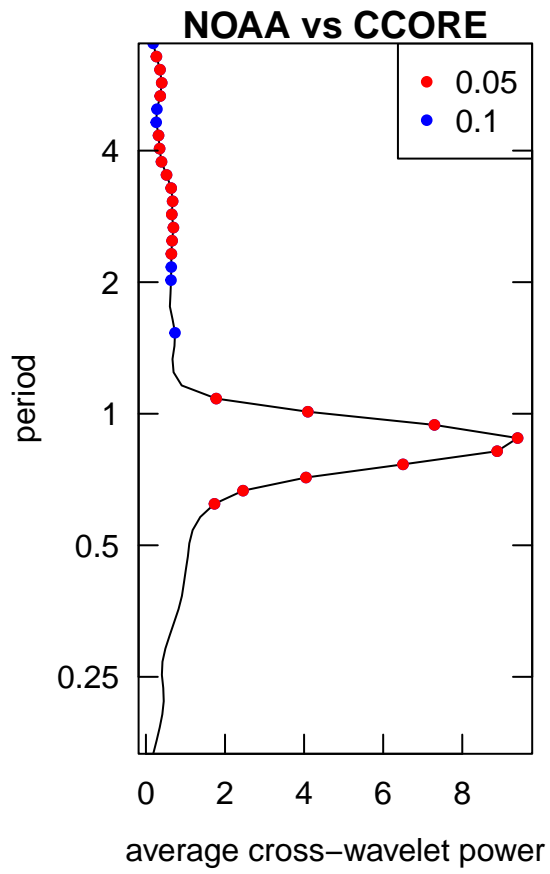


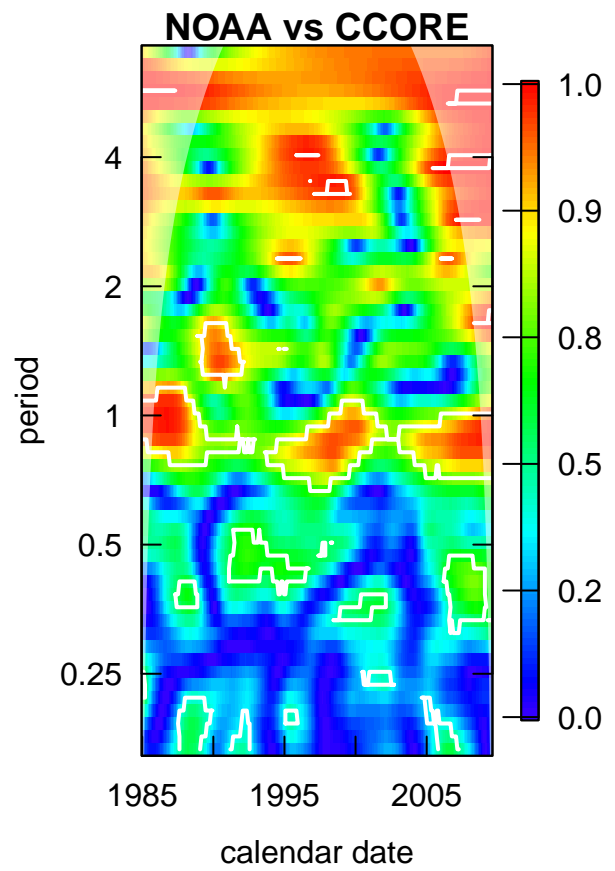
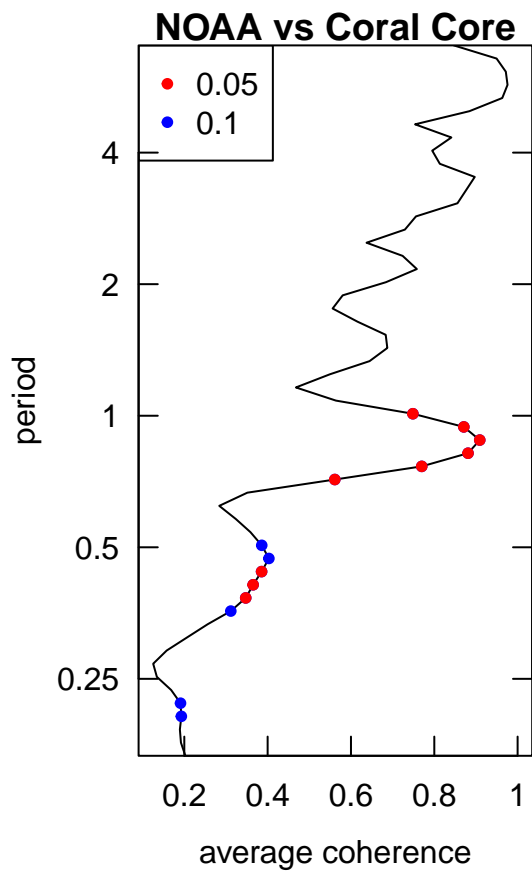


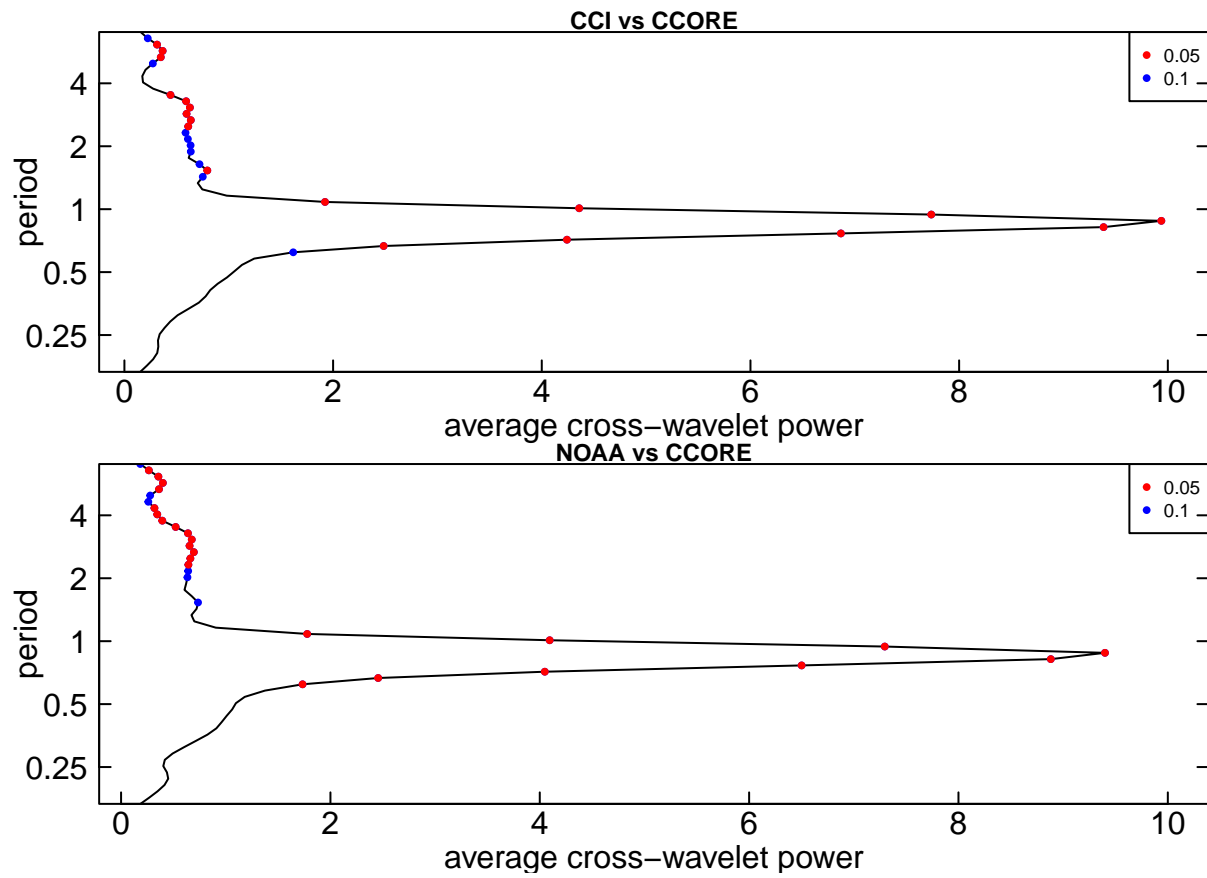


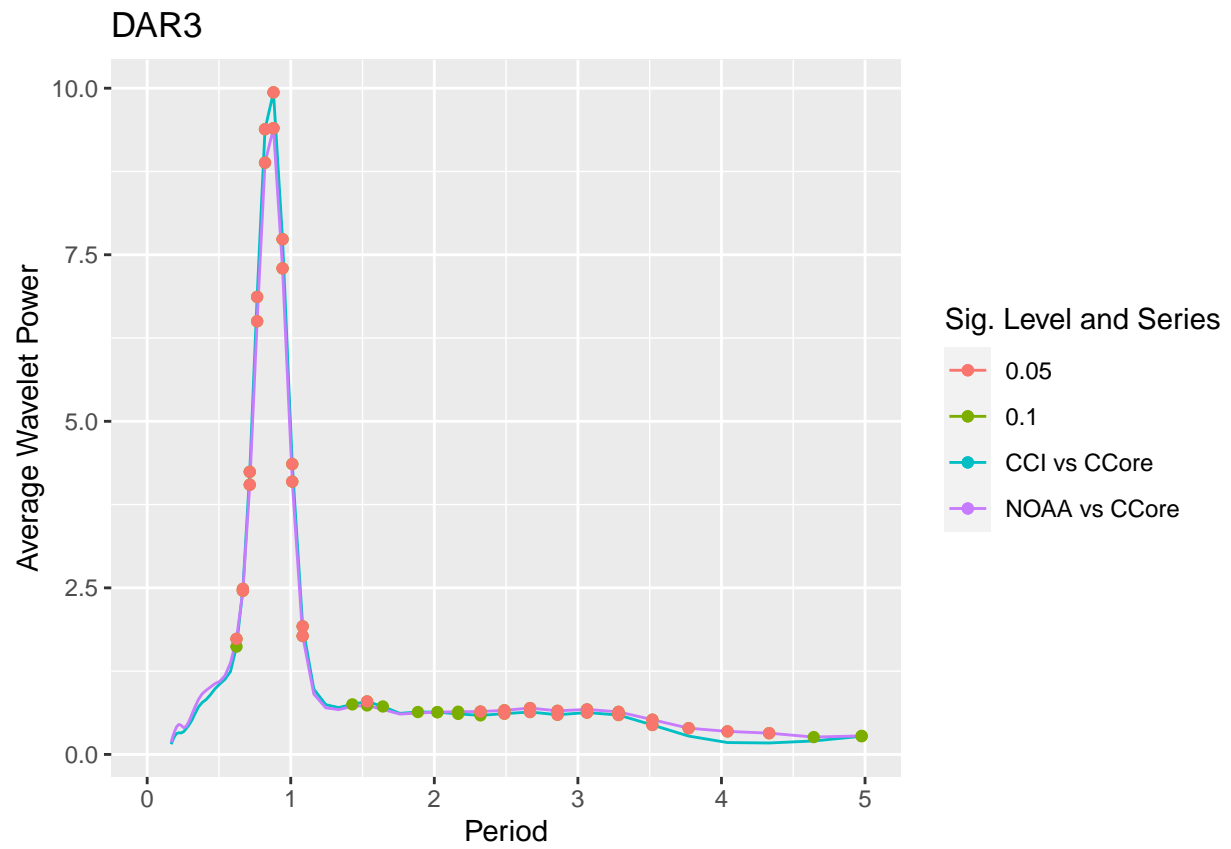
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

|



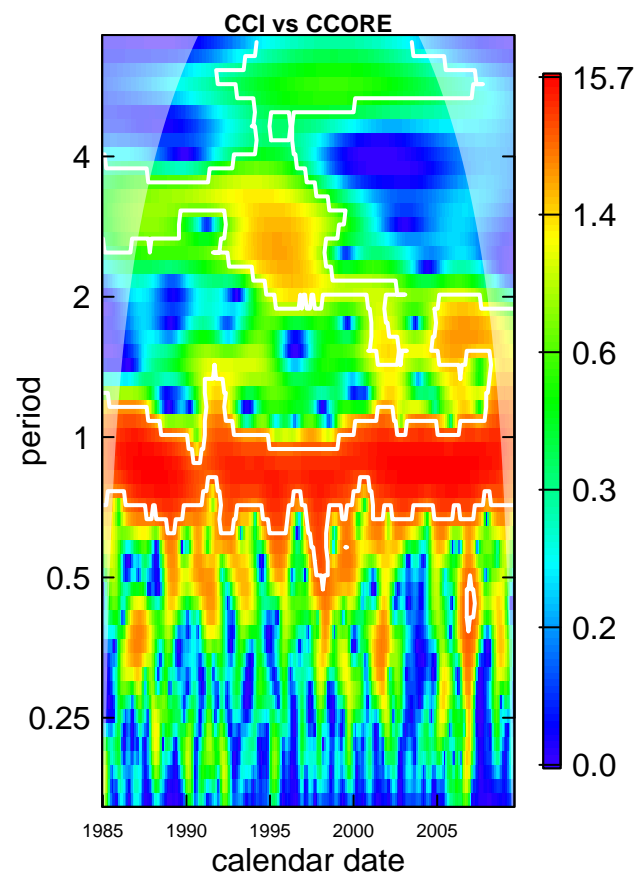
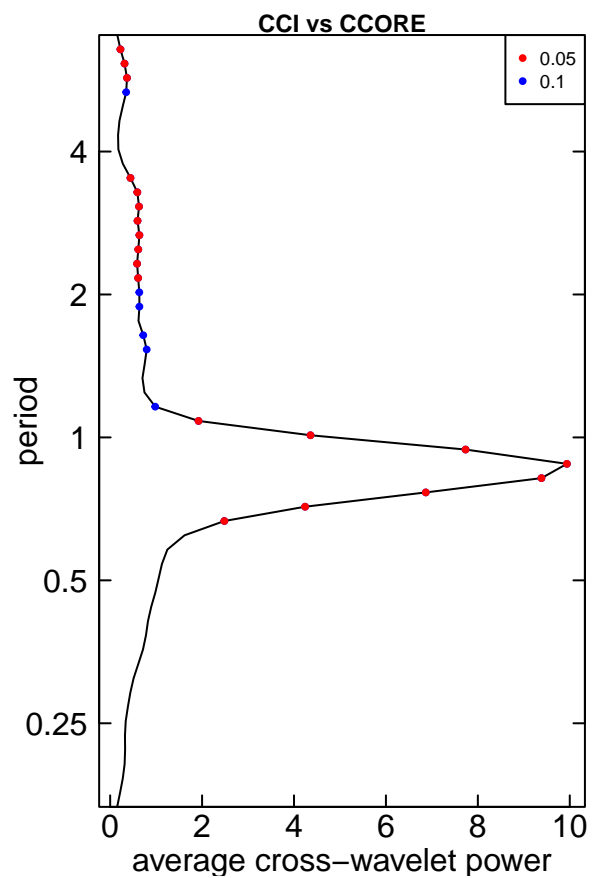


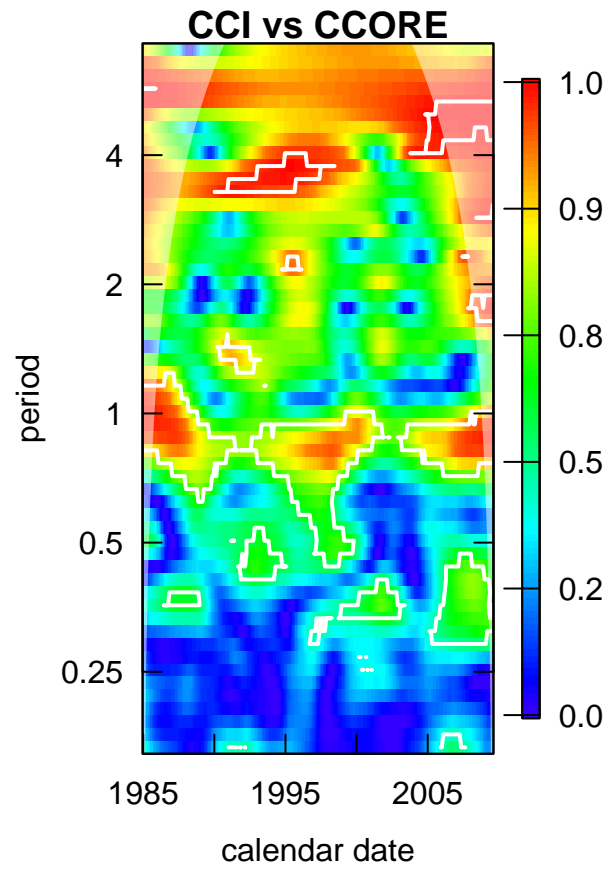
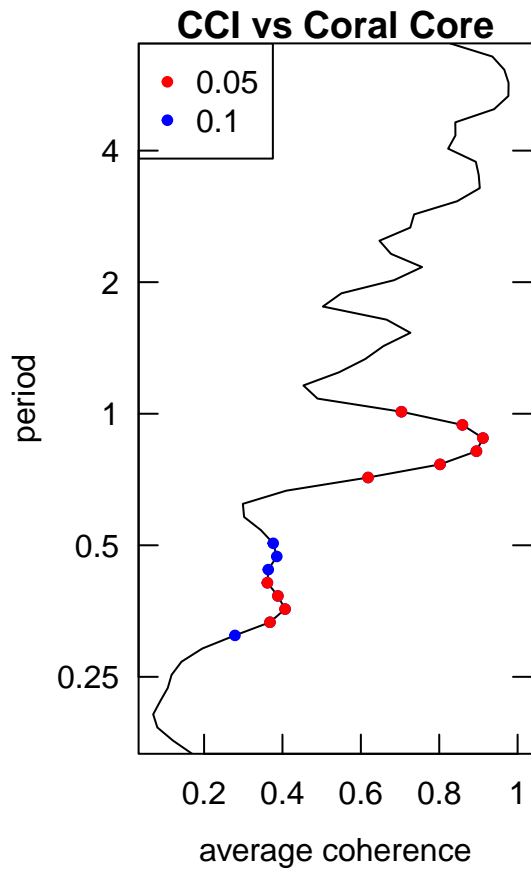




## DAR Long

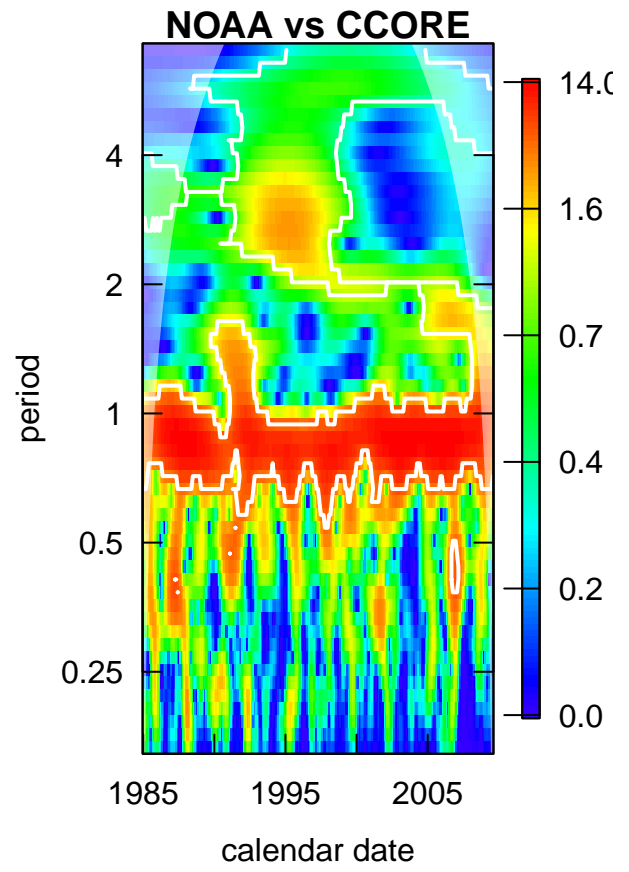
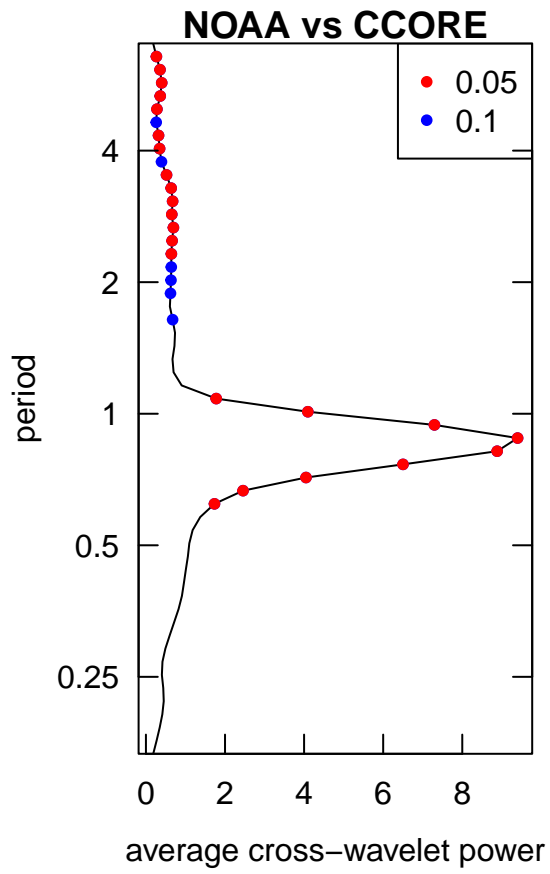
```
## Smoothing the time series...
## Starting wavelet transformation...
## ... and simulations...
## |
```



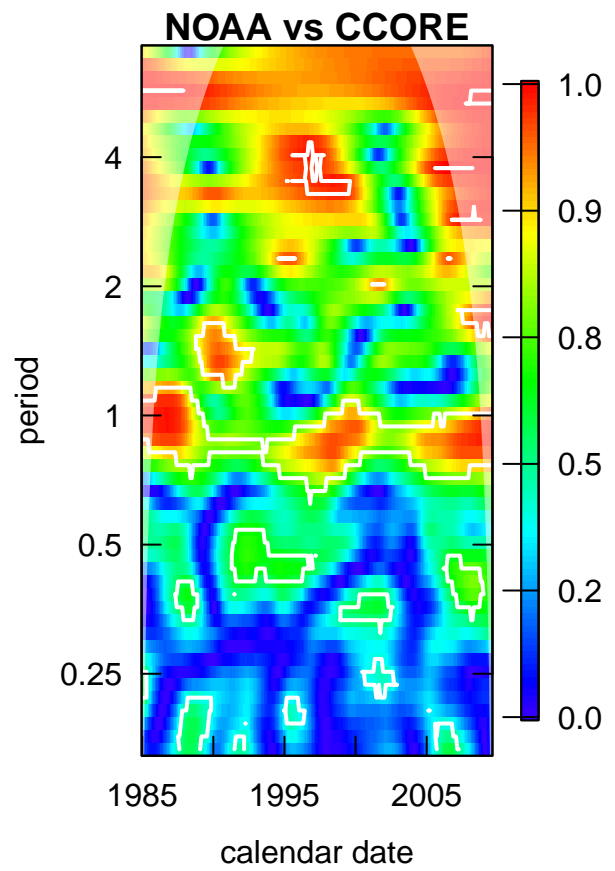
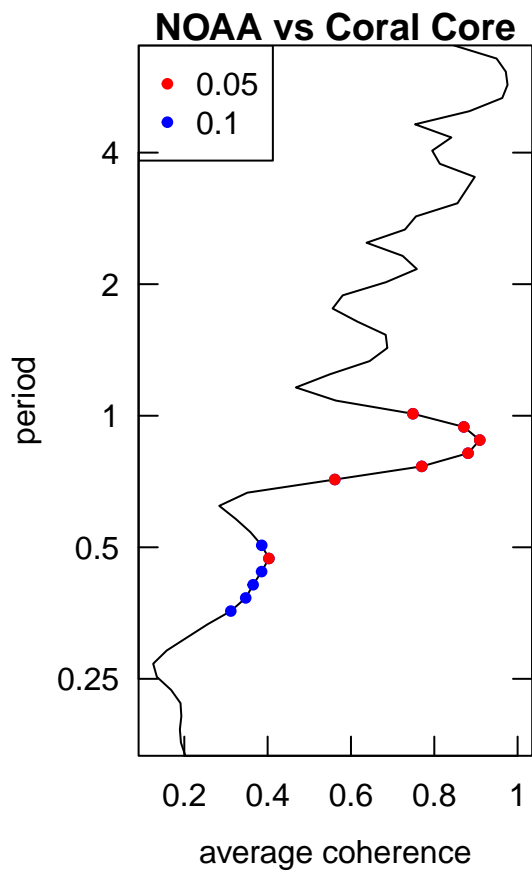


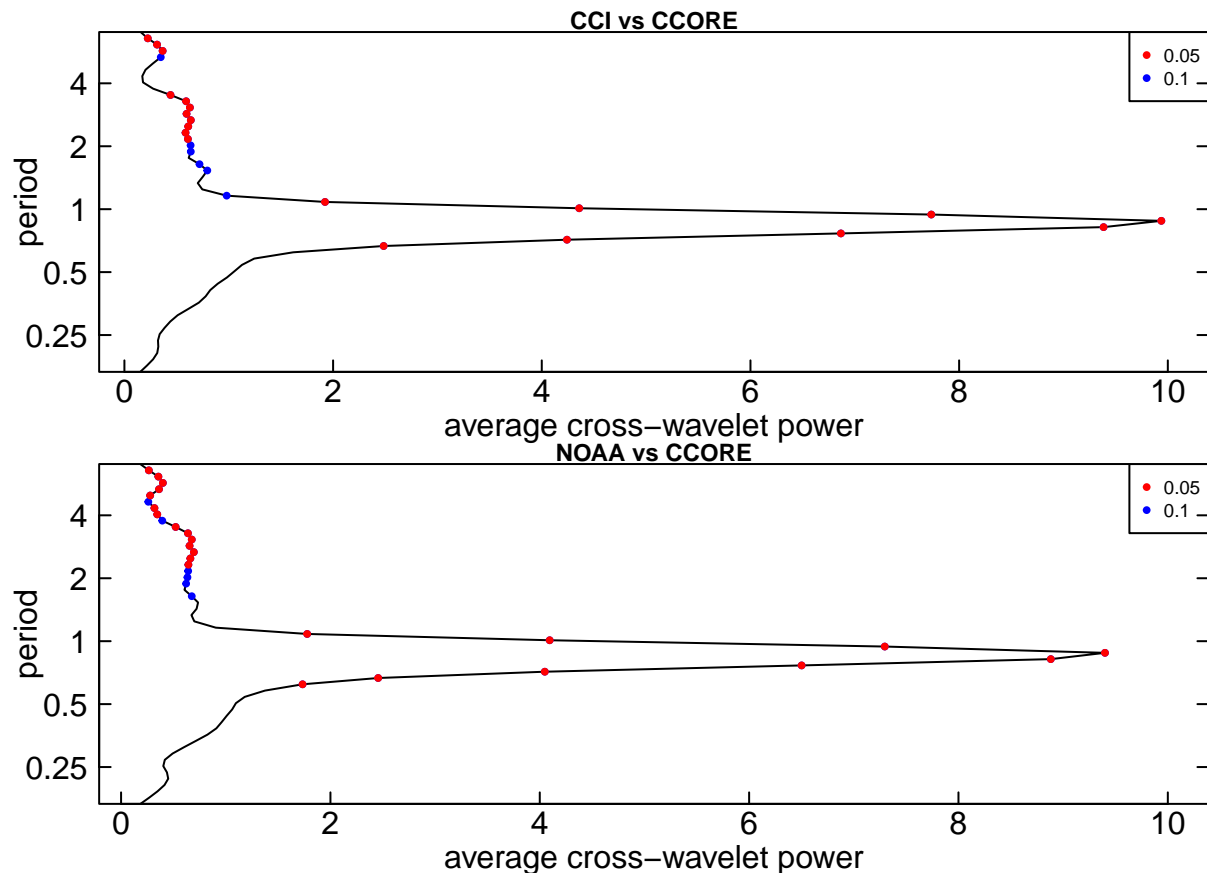
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

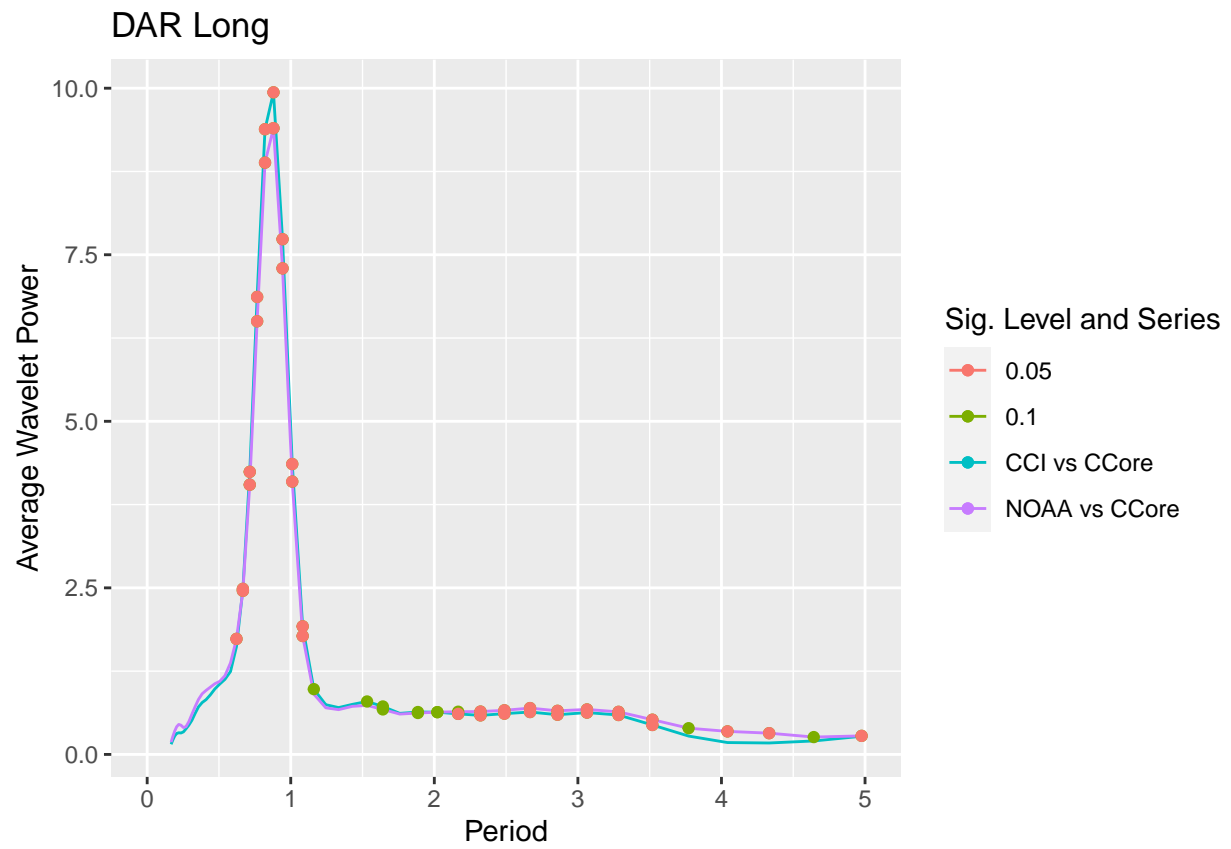
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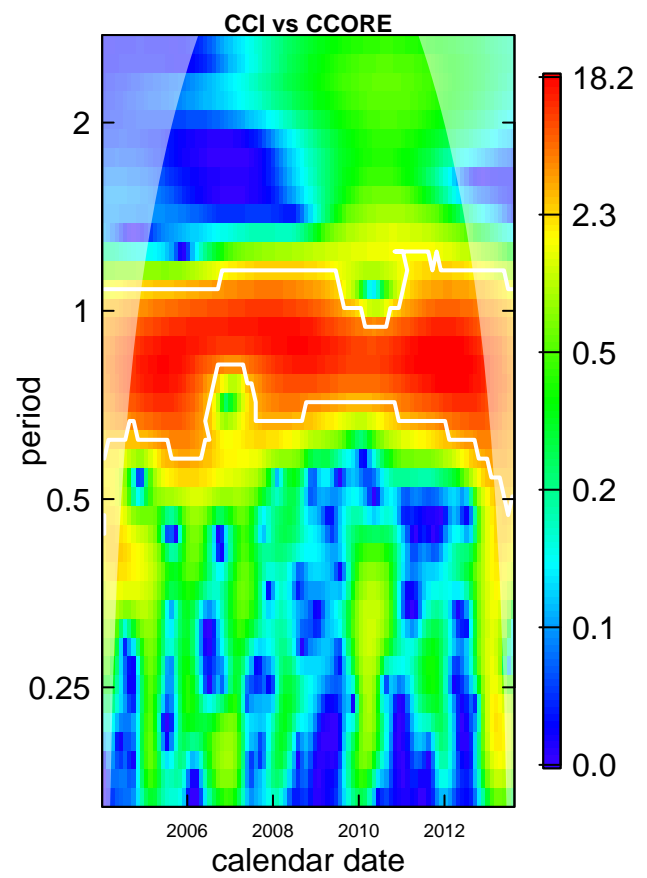
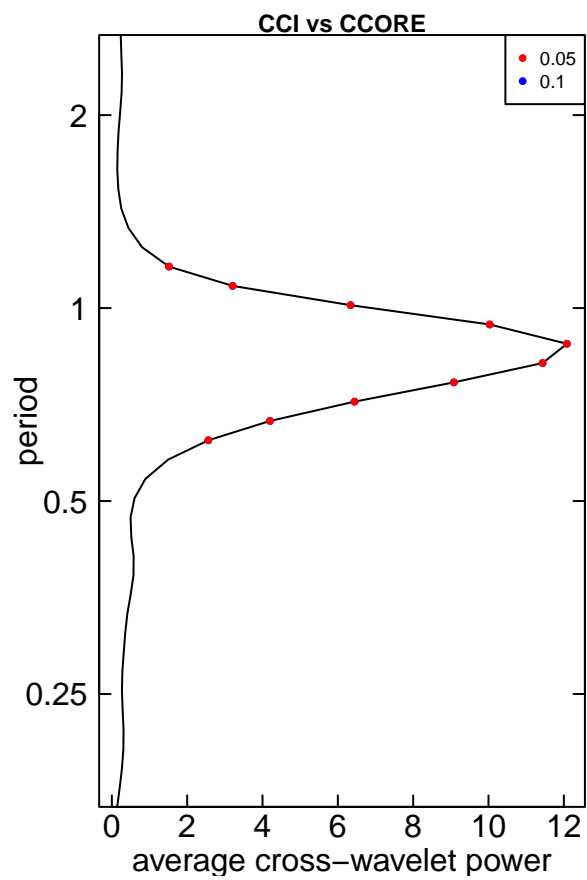


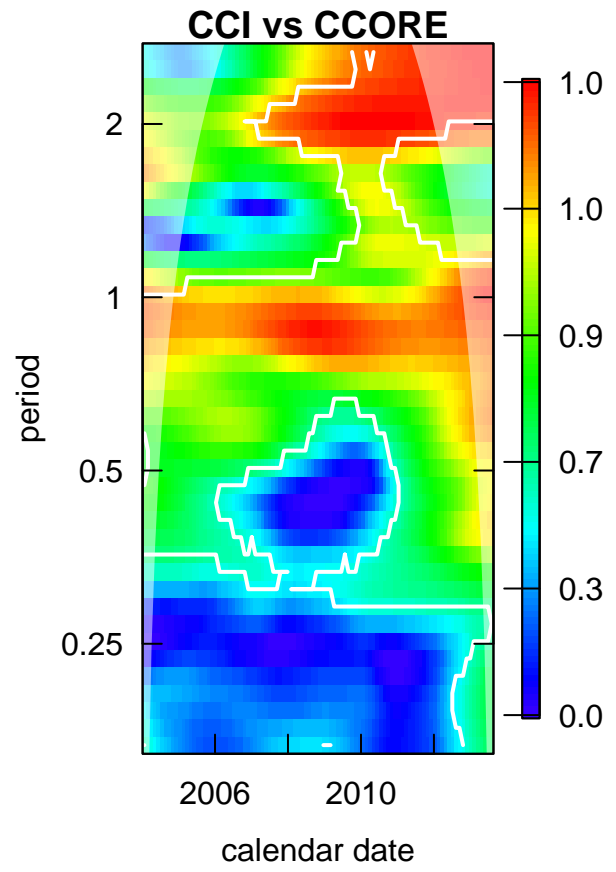
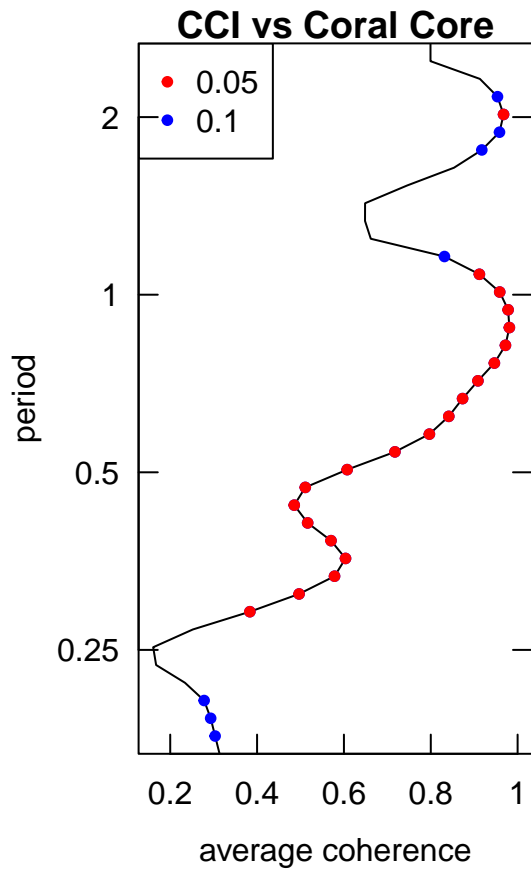




## Tantabiddi 13TNT

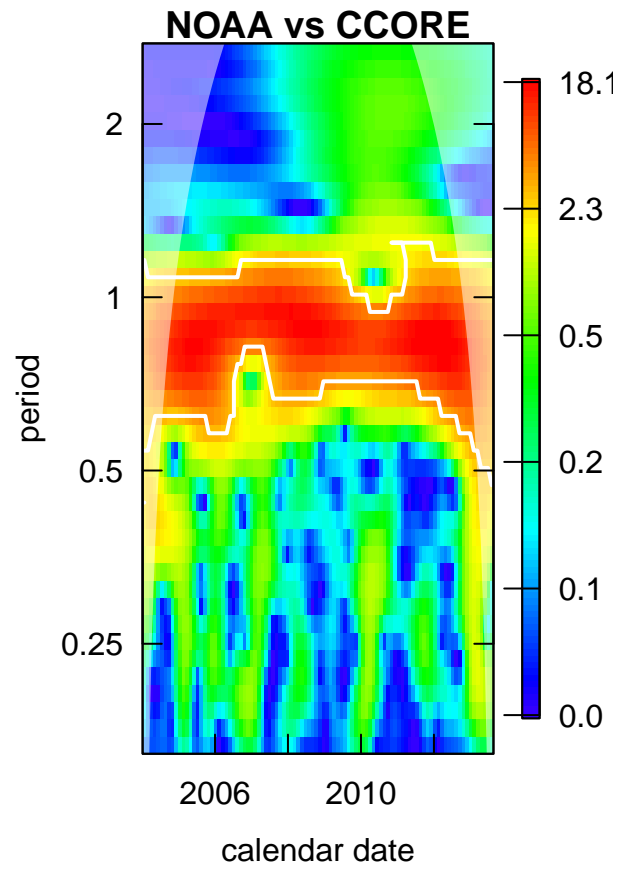
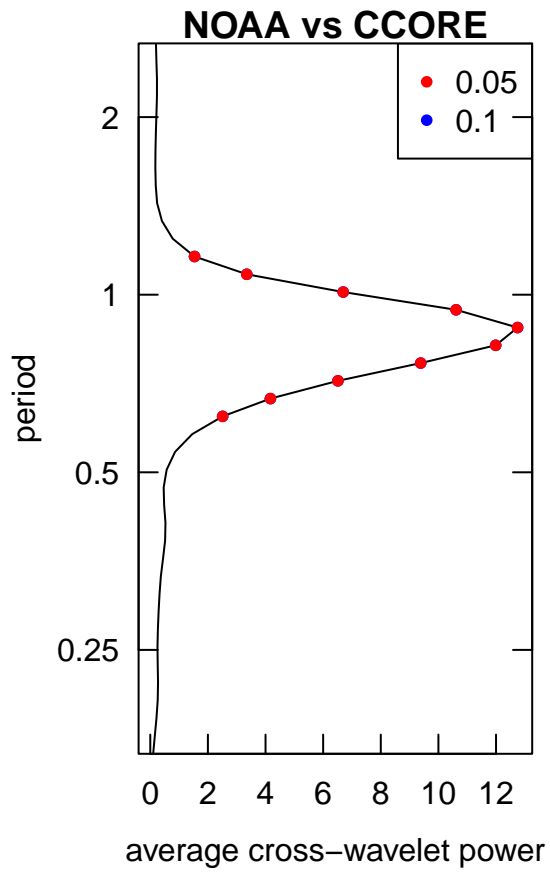
```
## Smoothing the time series...
## Starting wavelet transformation...
## ... and simulations...
## |
```

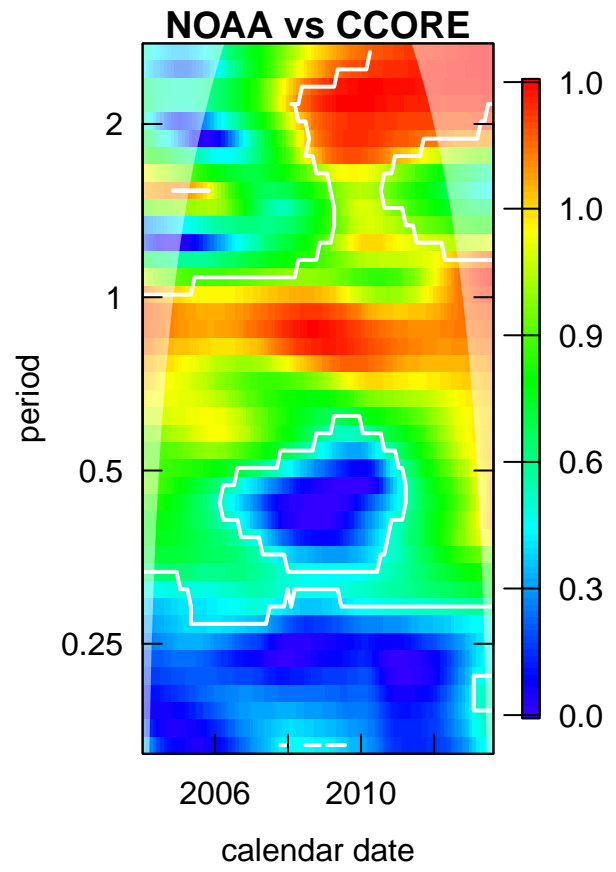
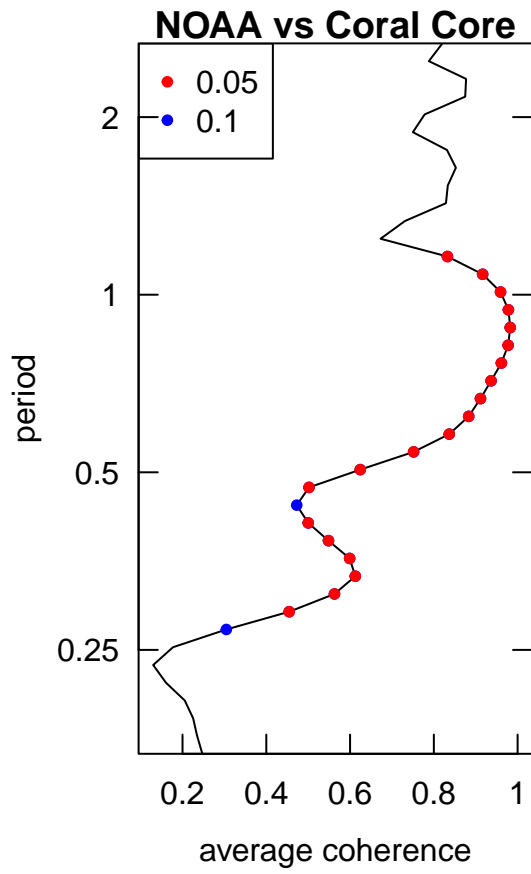


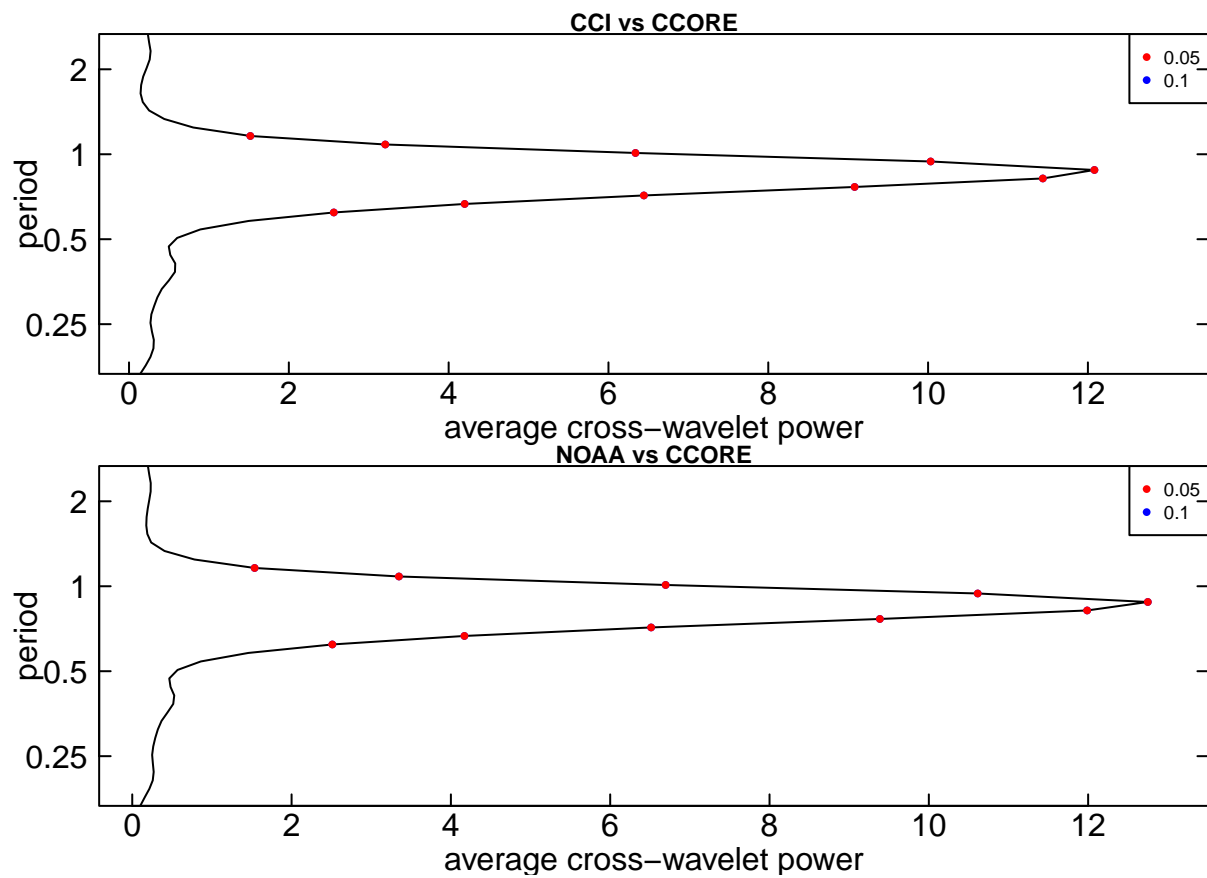


```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

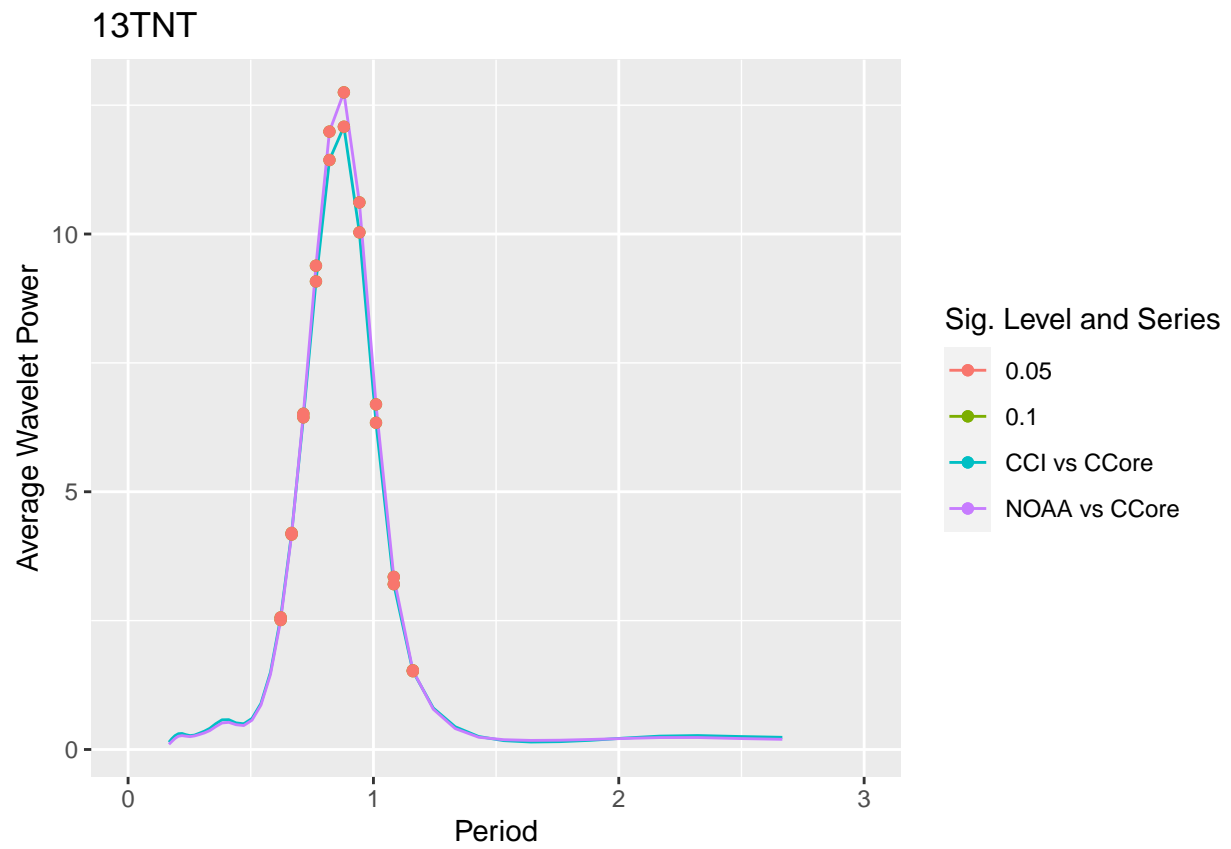
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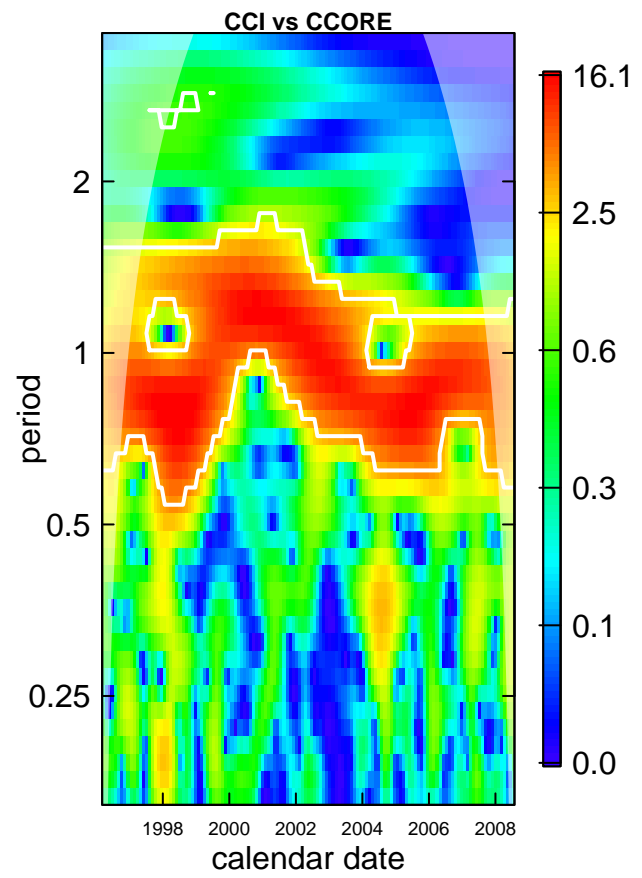
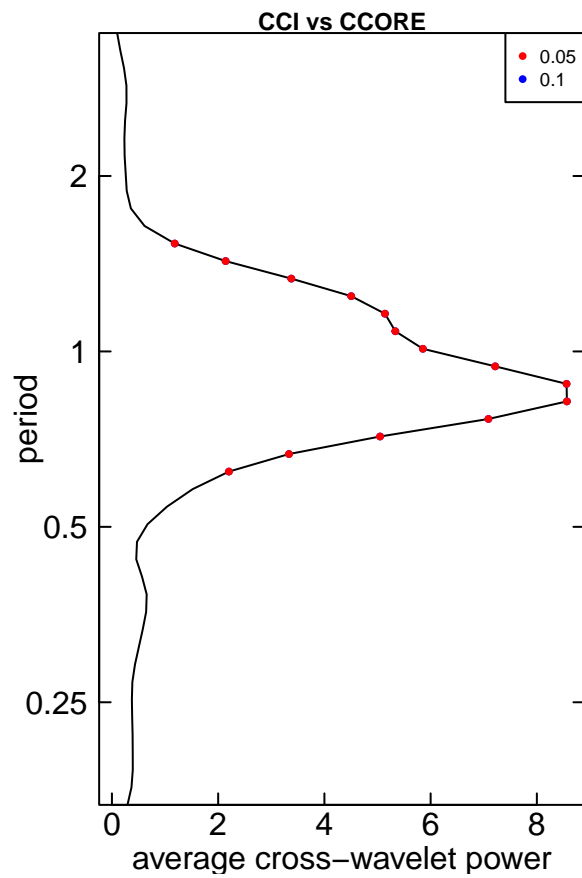


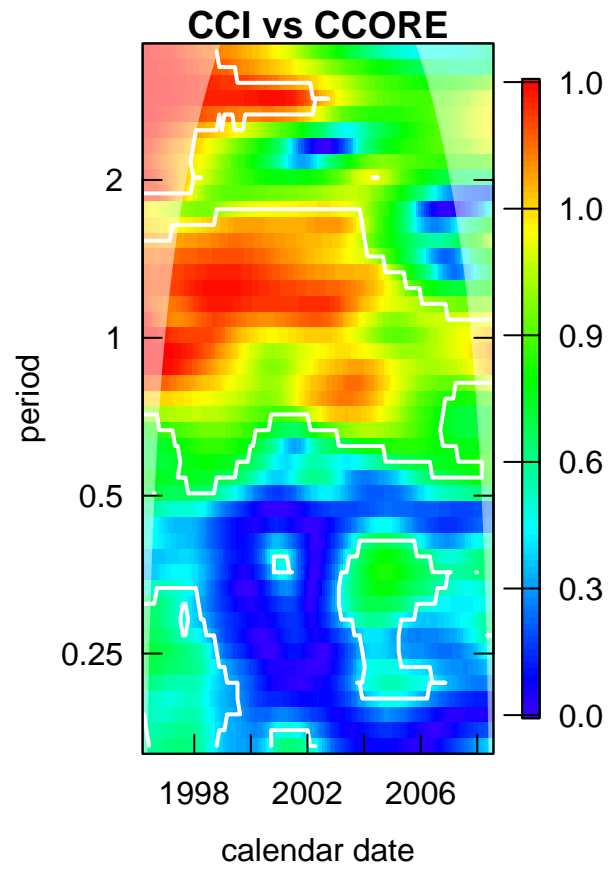
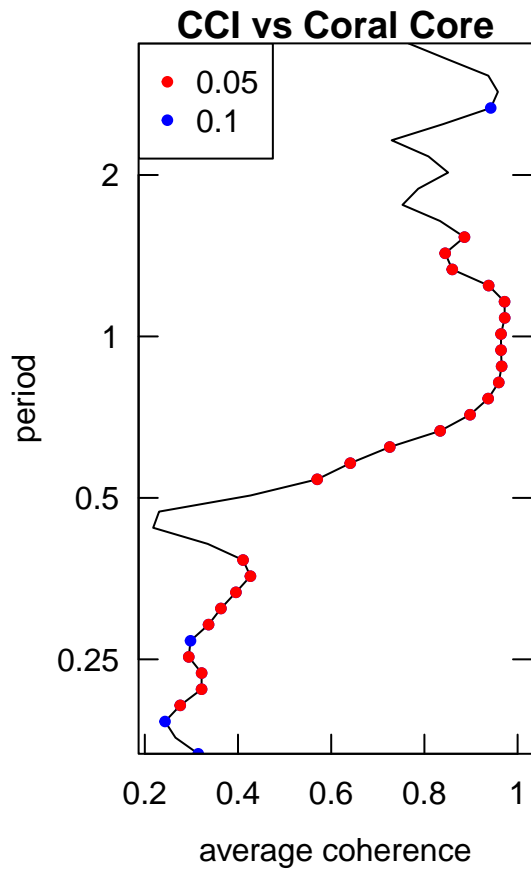




Tantabiddi 08TNT

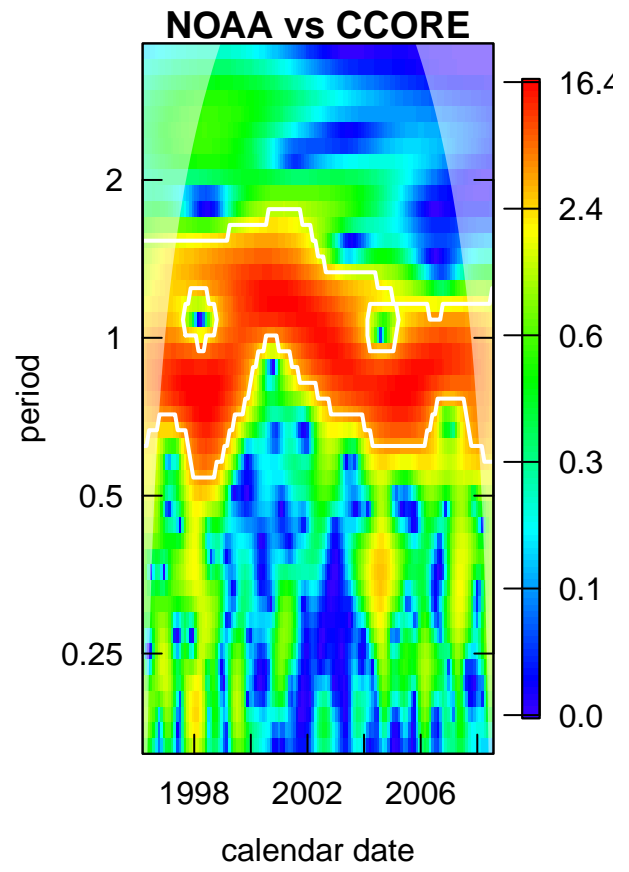
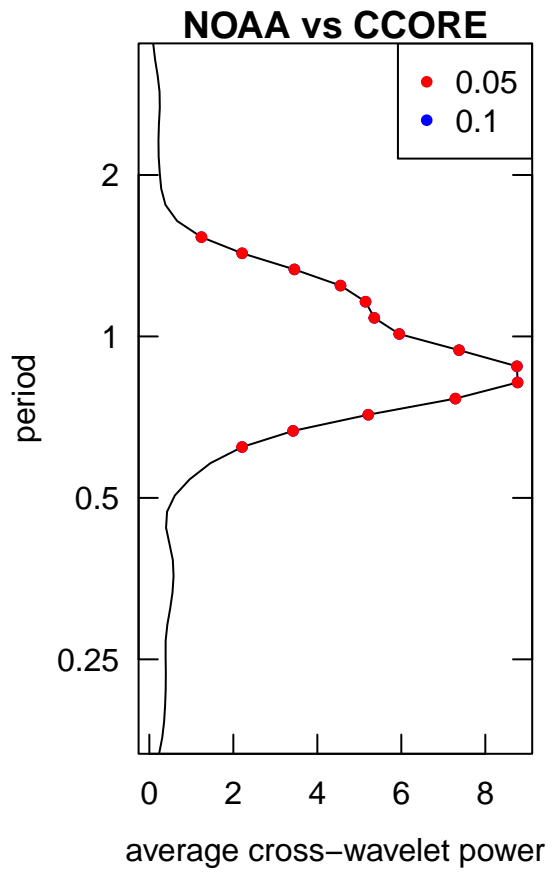
```
## Smoothing the time series...
## Starting wavelet transformation...
## ... and simulations...
## |
```

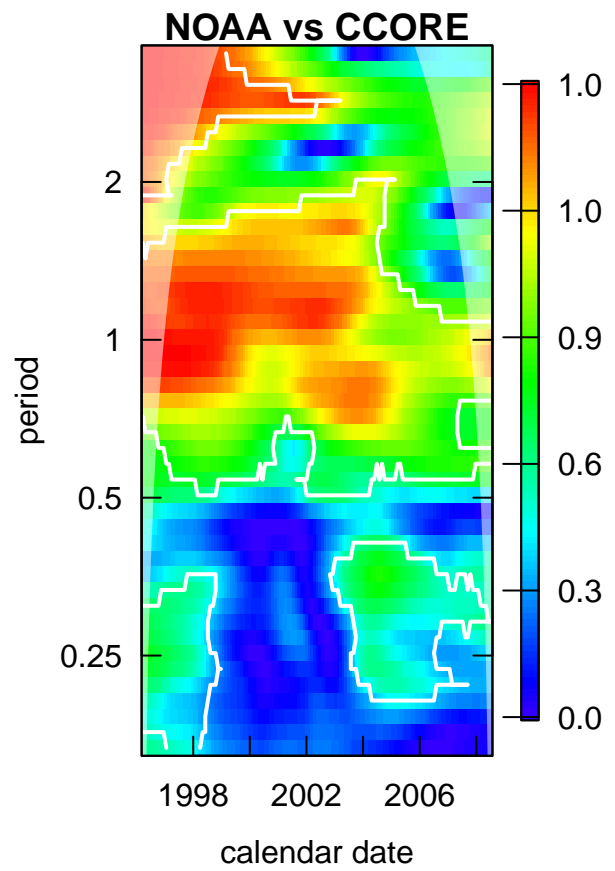
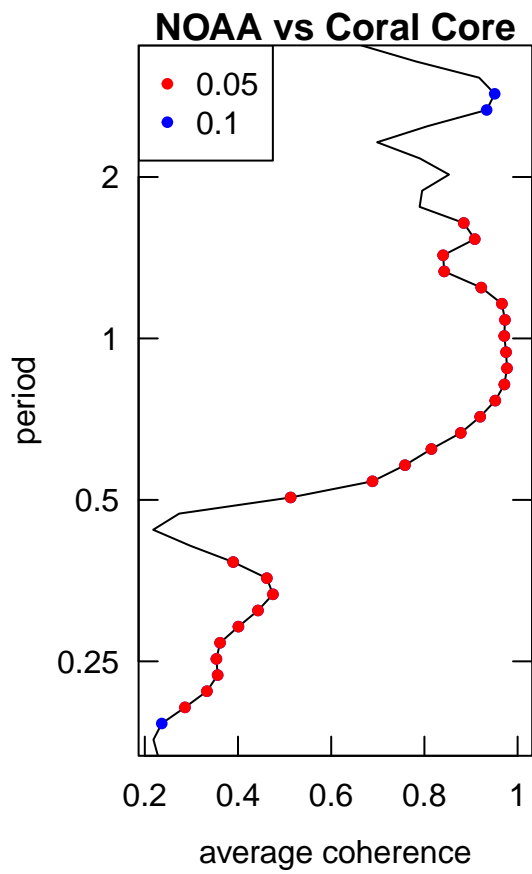


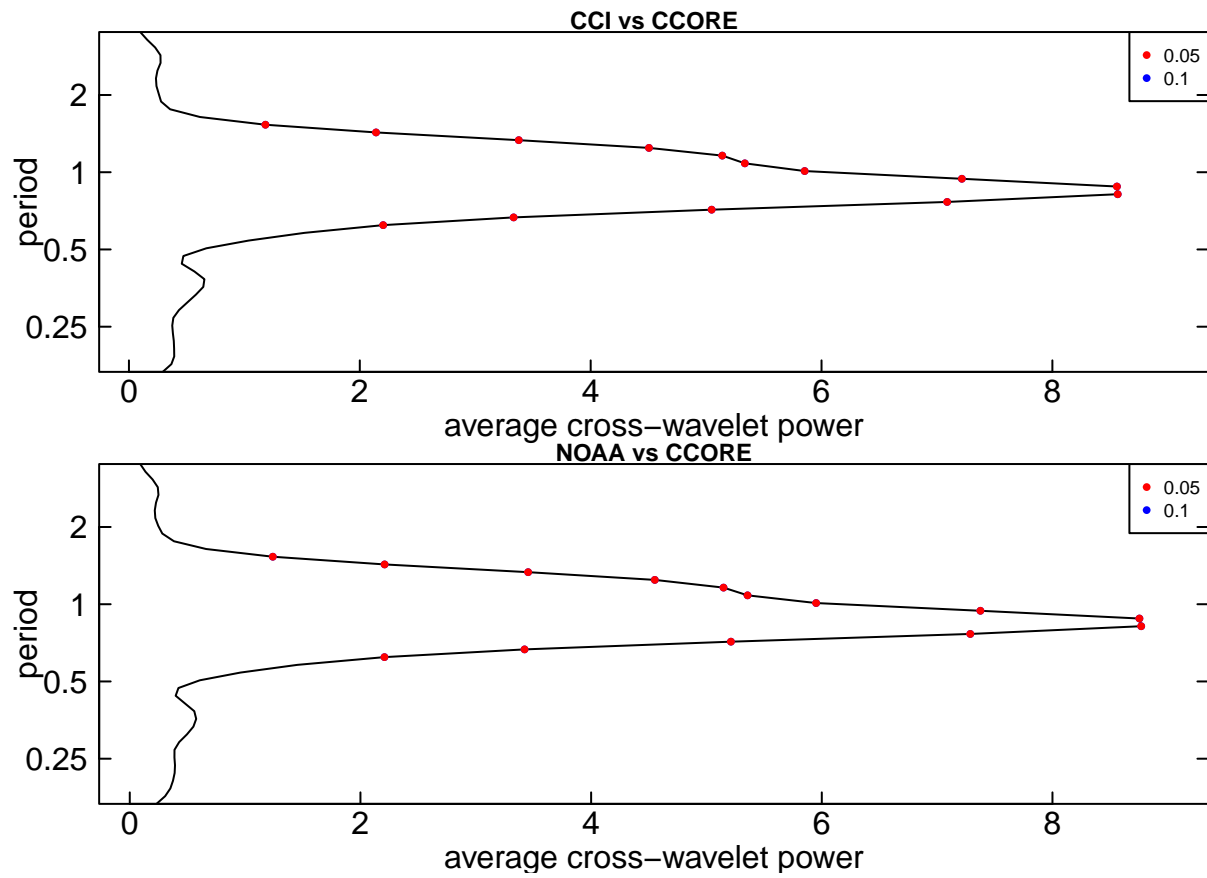


```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

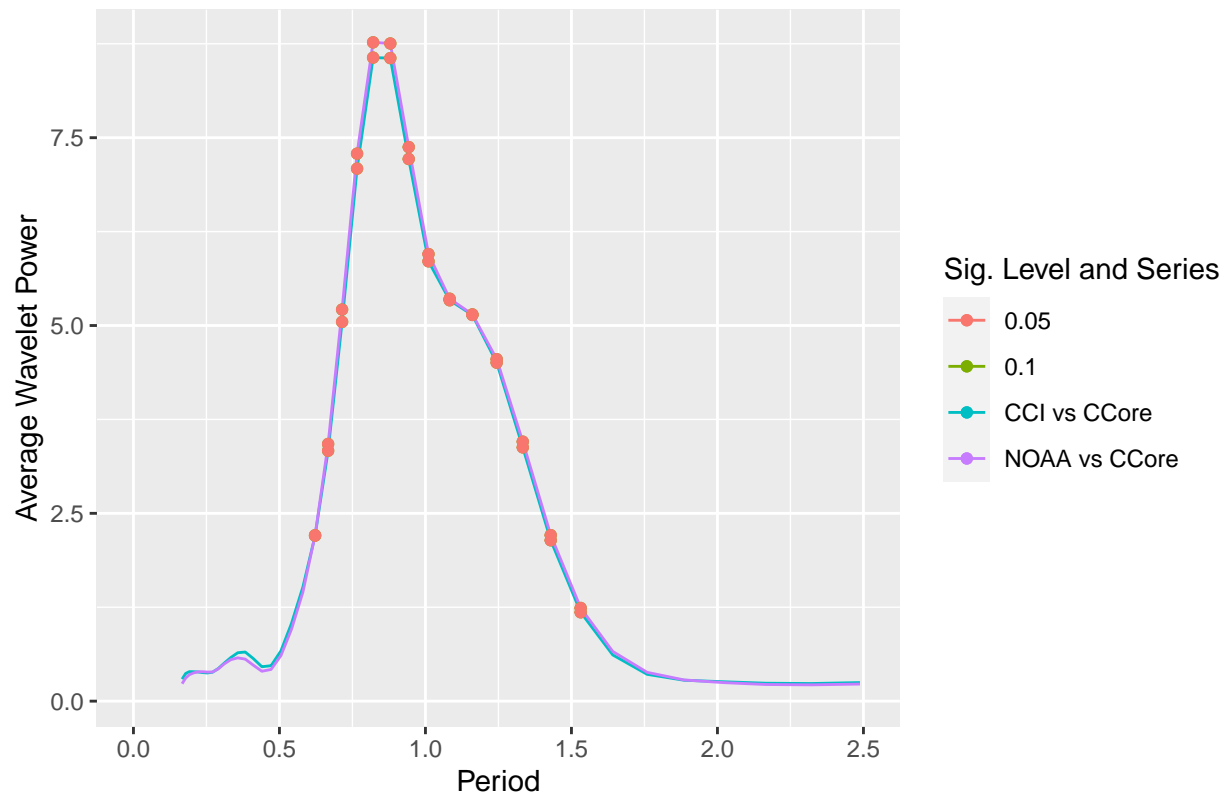
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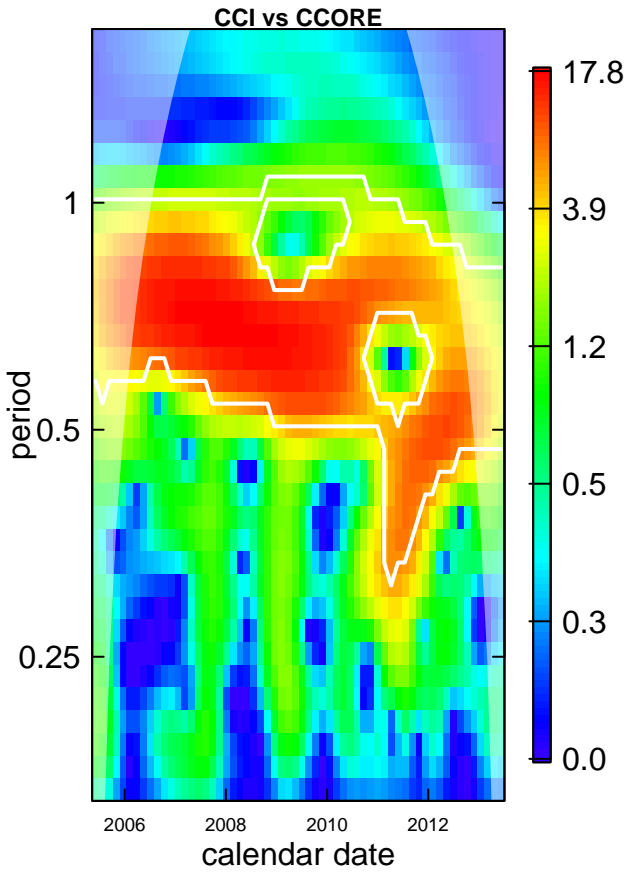
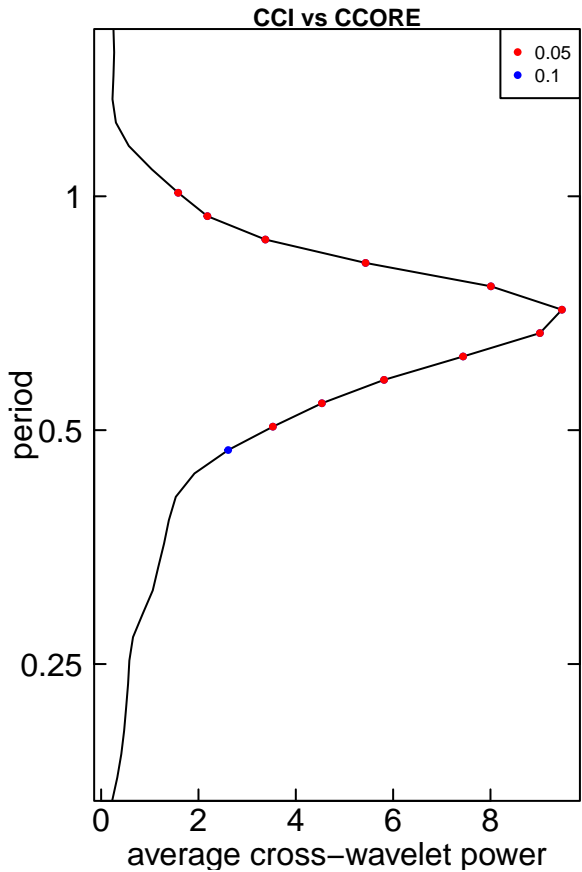
08TNT



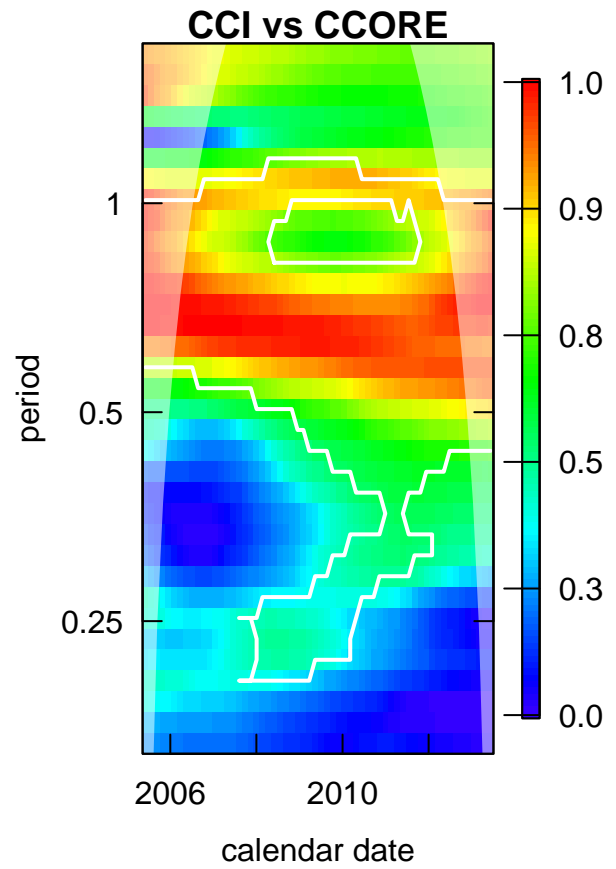
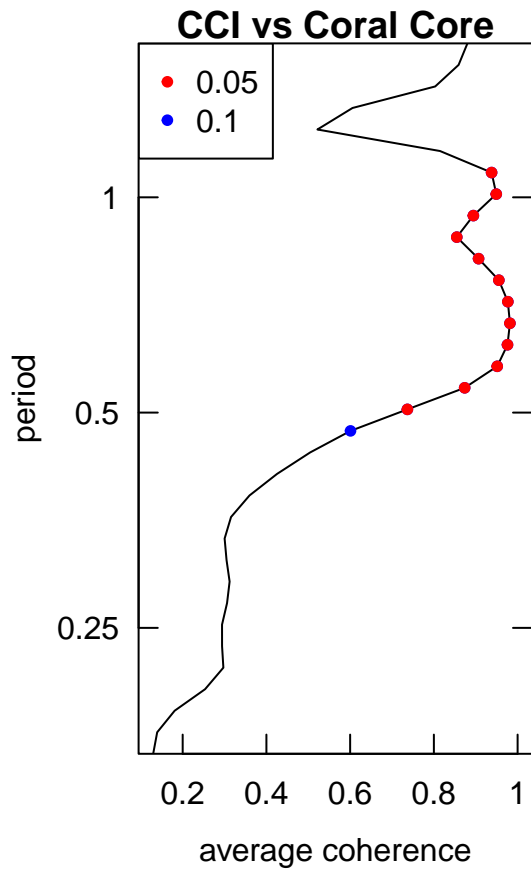
Bundegi 13BND

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

|

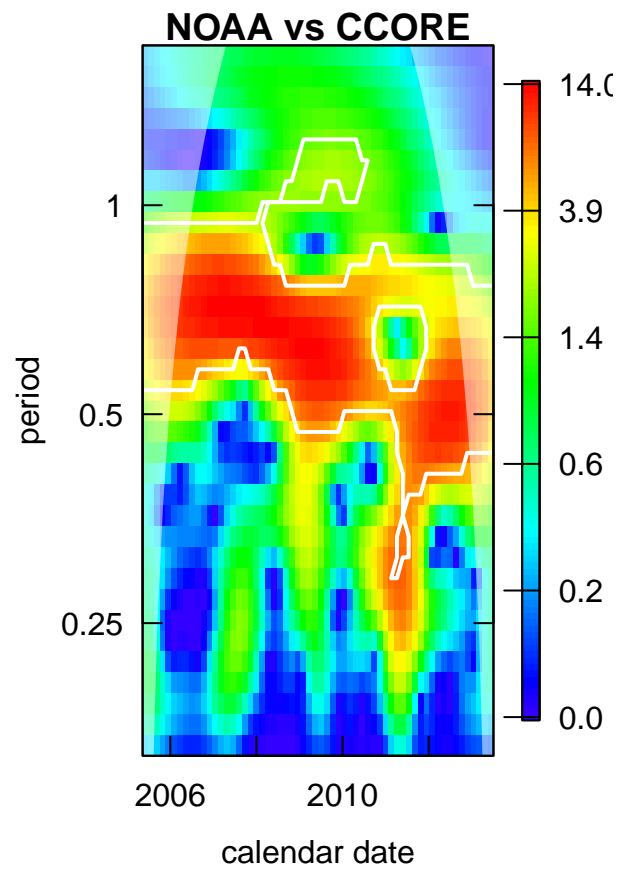
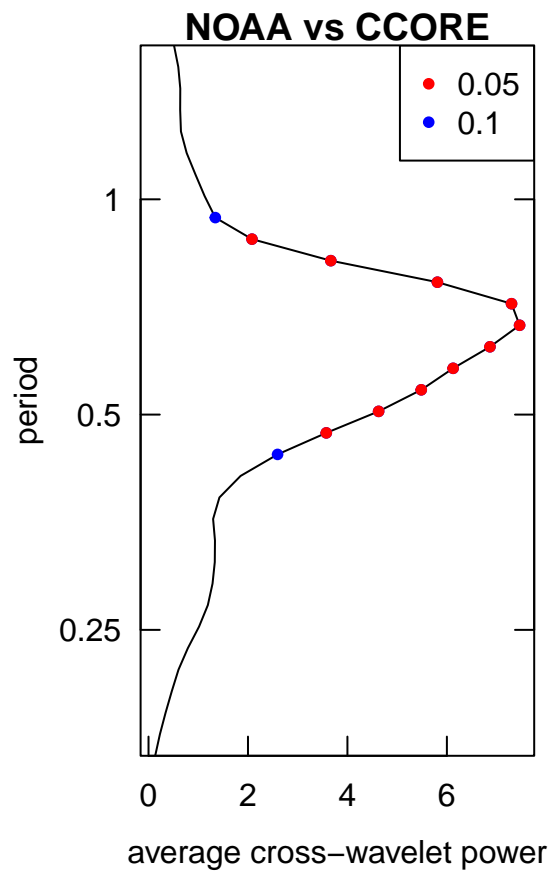


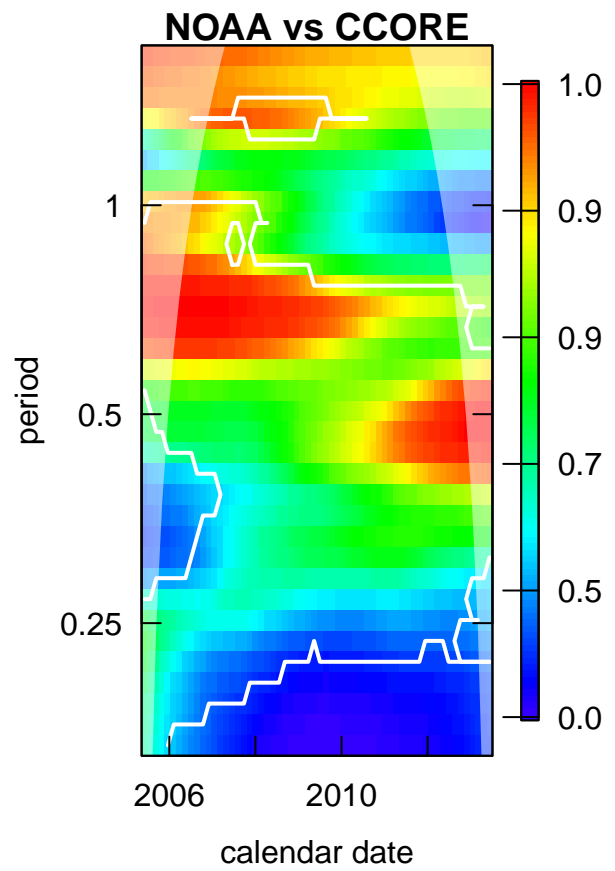
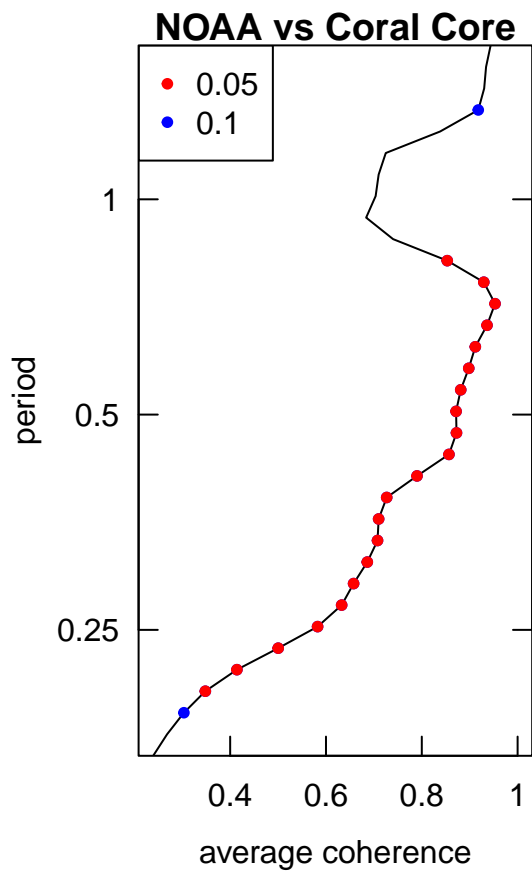


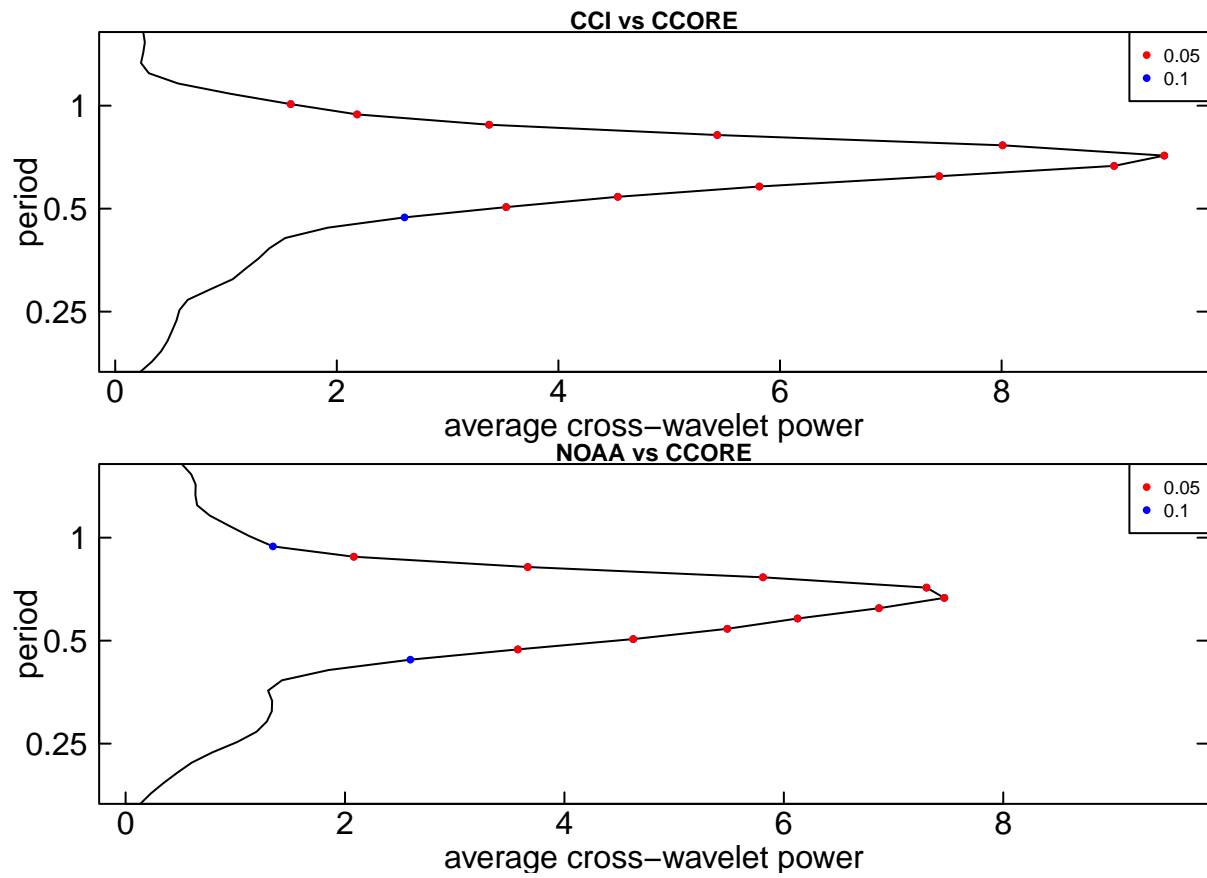


```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

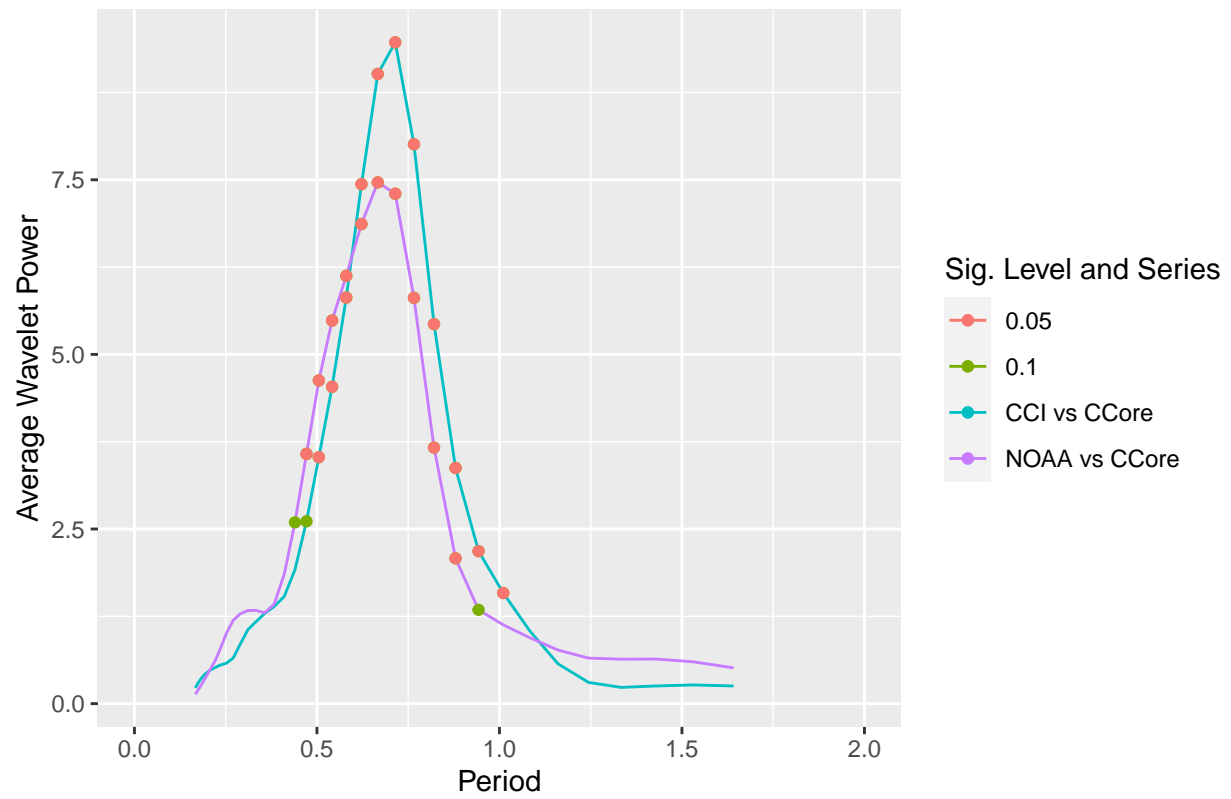
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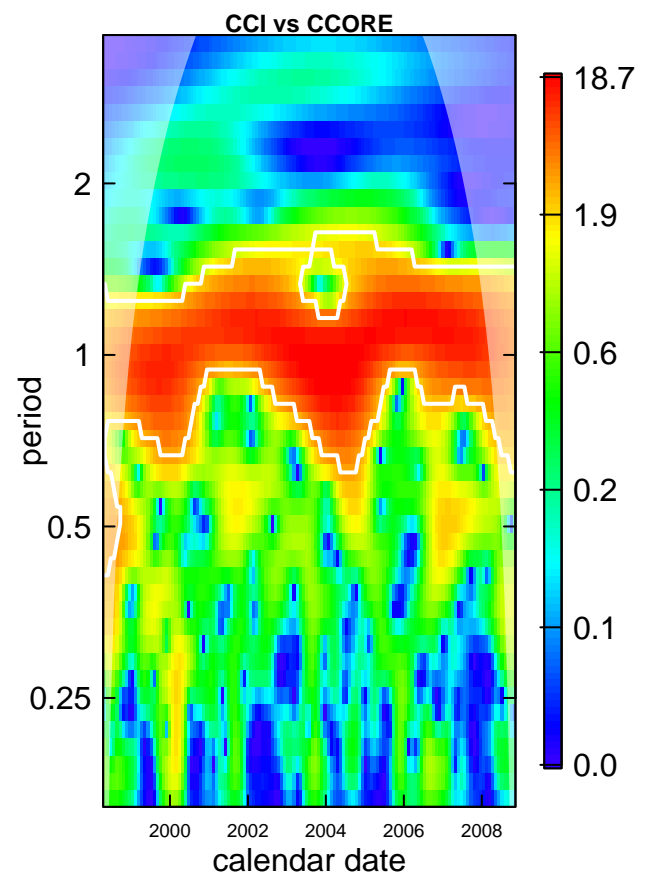
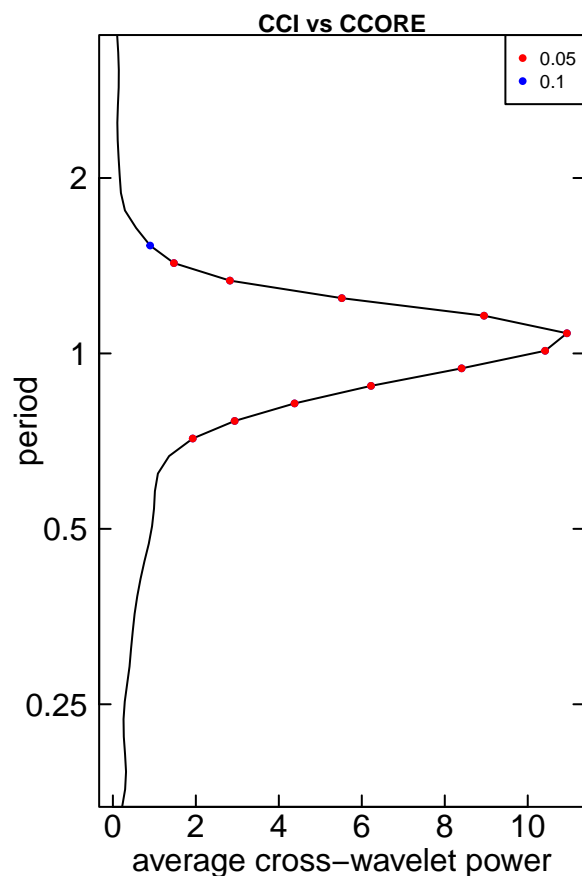


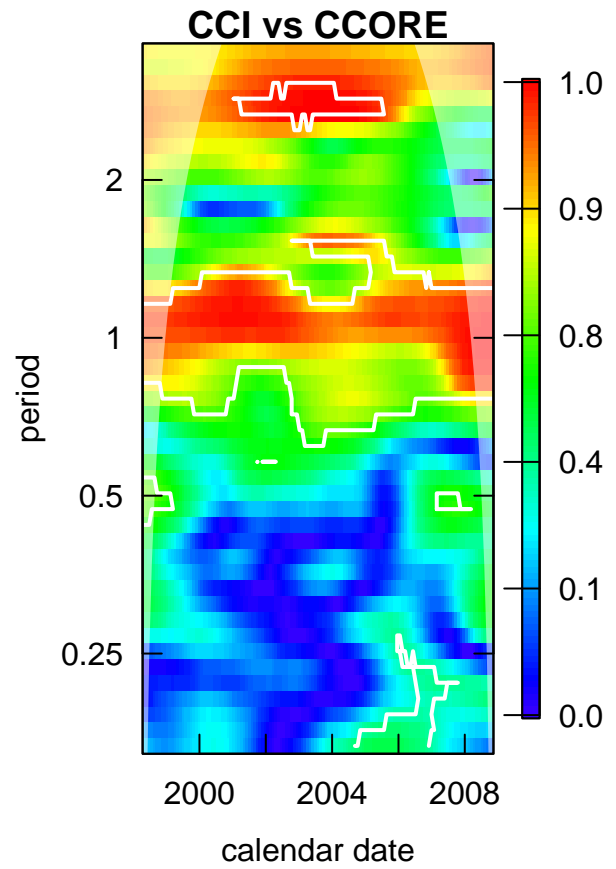
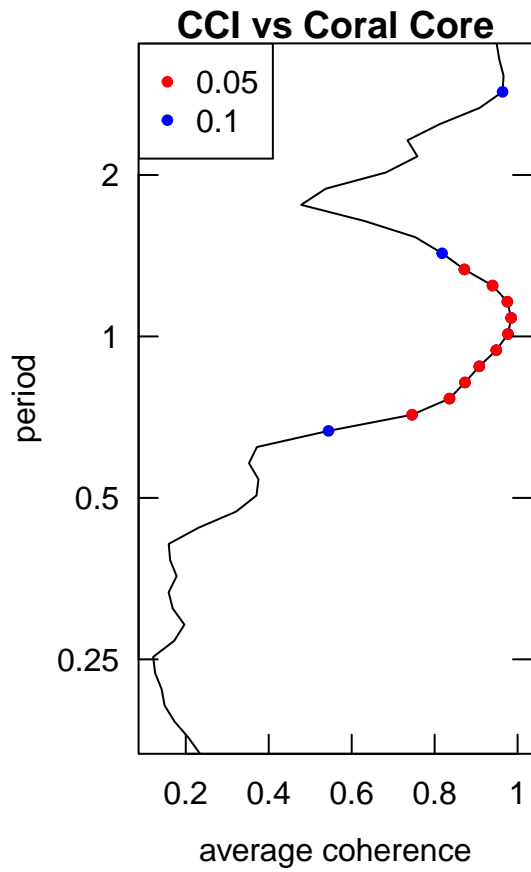
13BND



## Bundegi 08BND

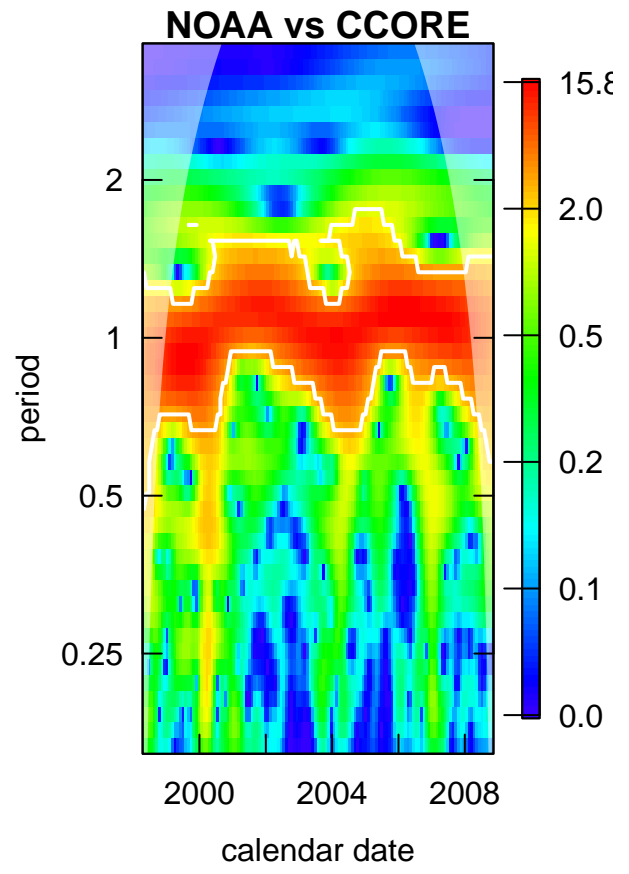
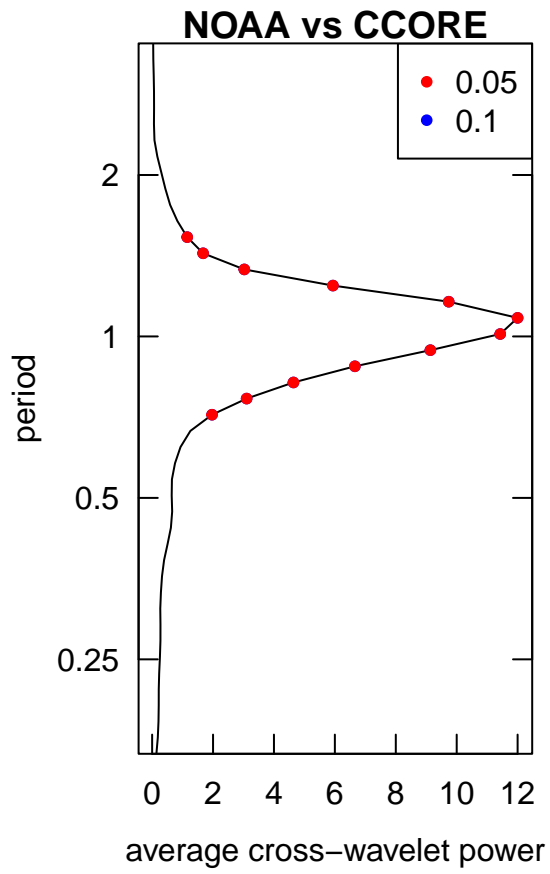
```
## Smoothing the time series...
## Starting wavelet transformation...
## ... and simulations...
## |
```



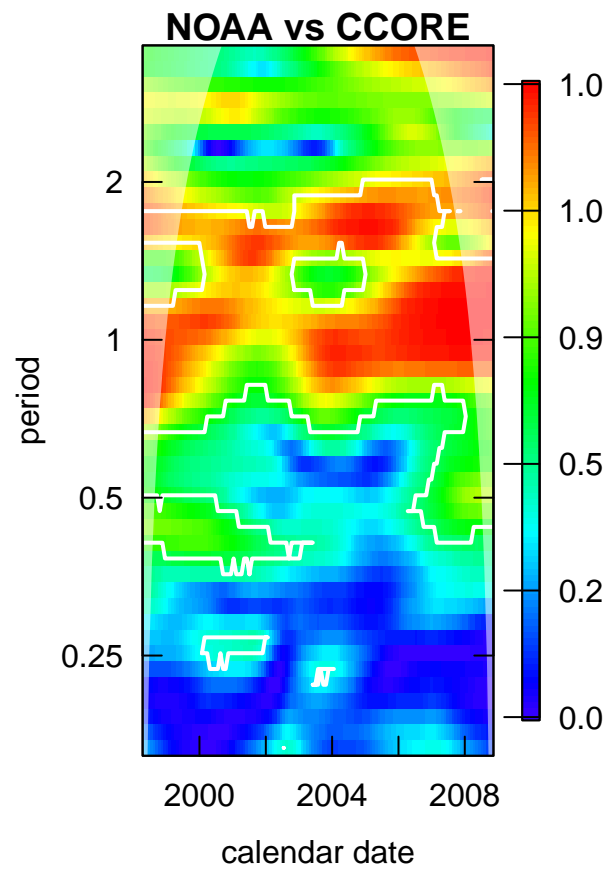
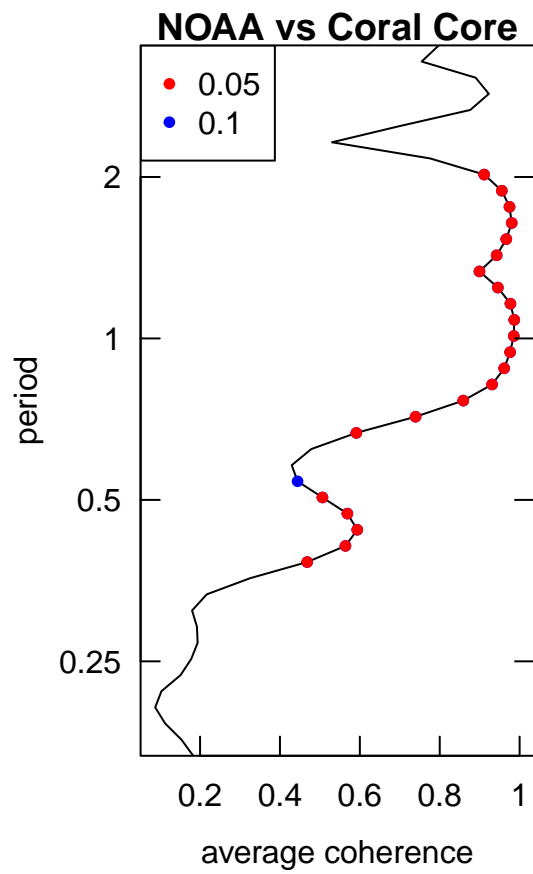


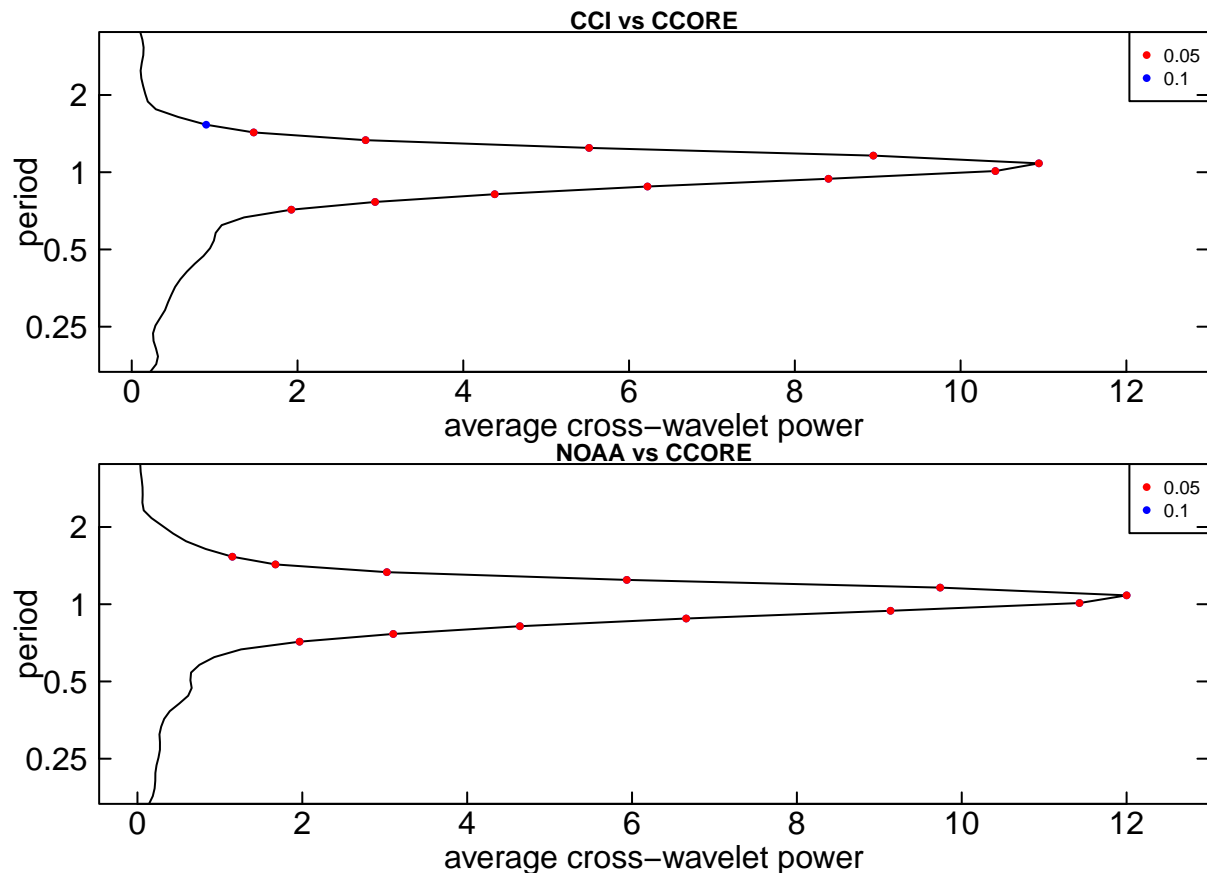
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

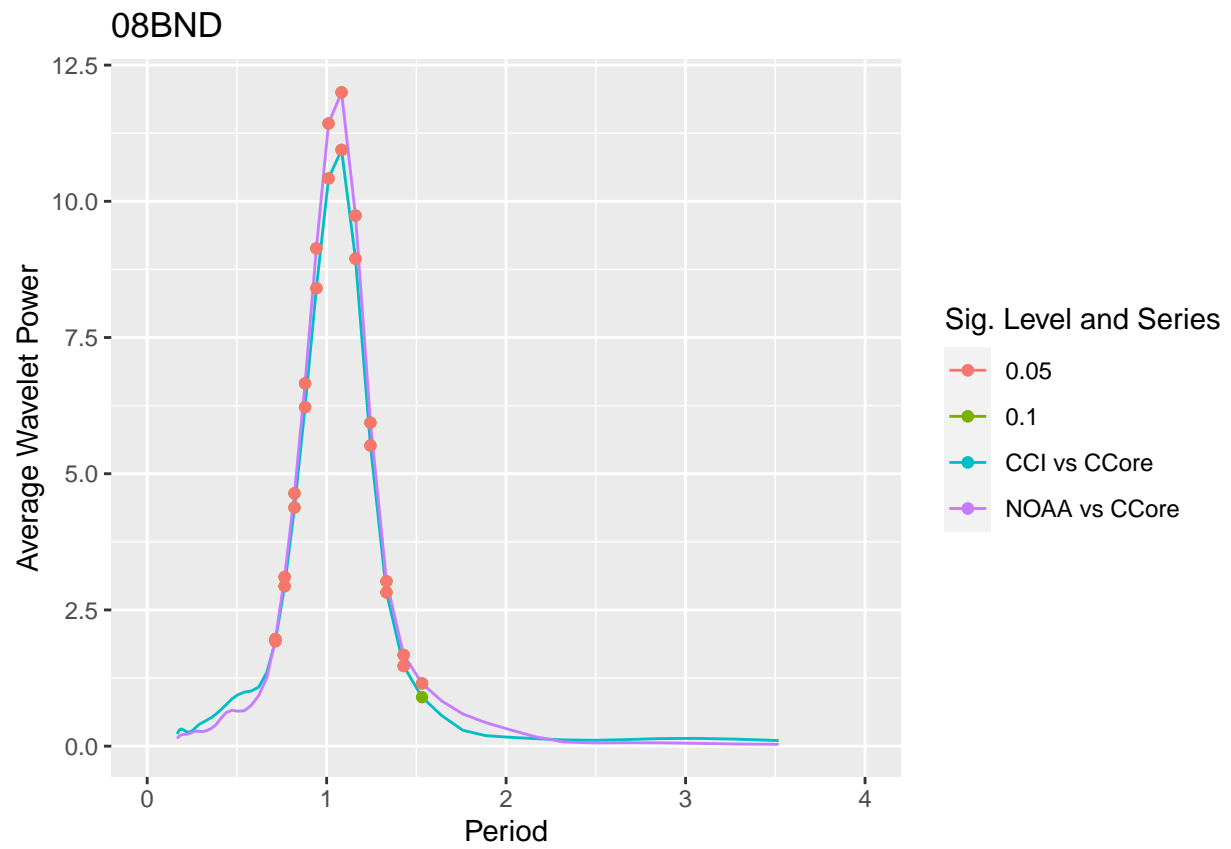
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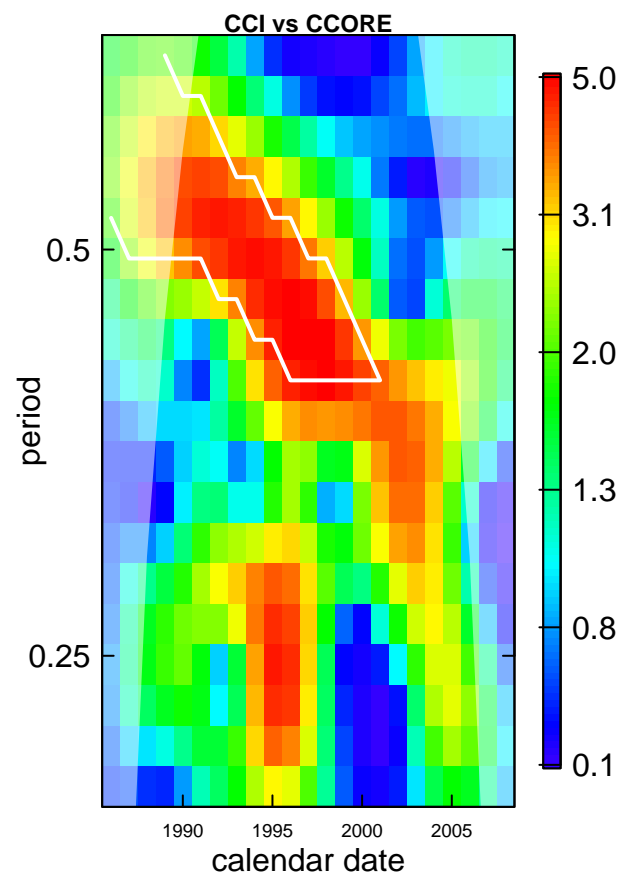
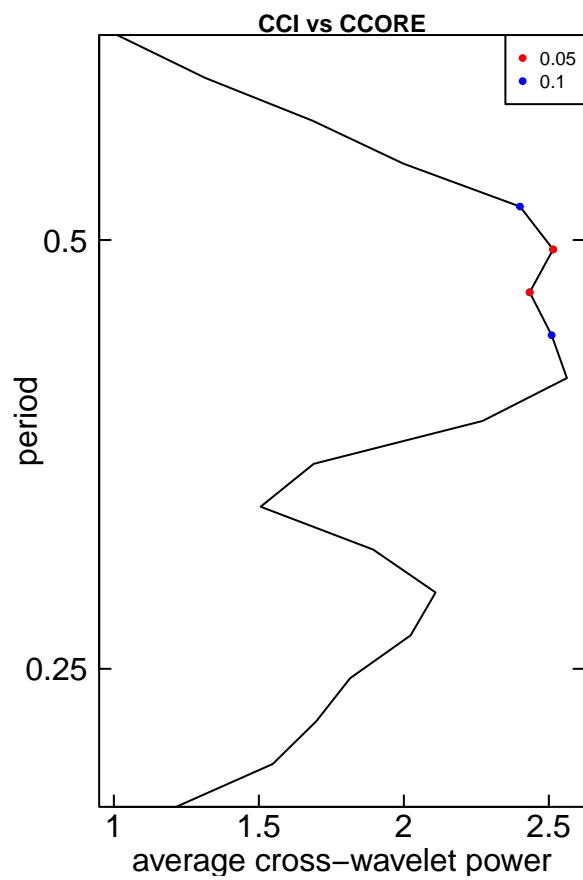


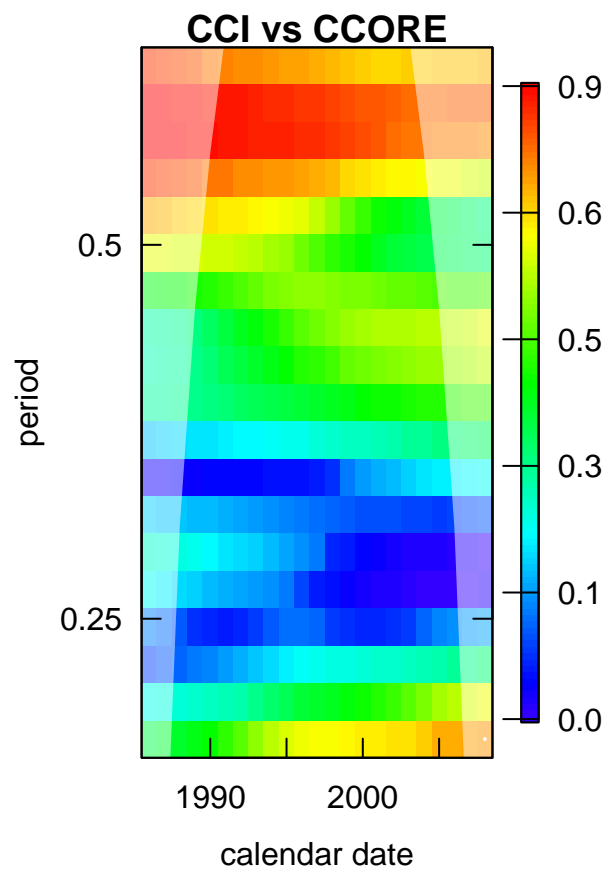
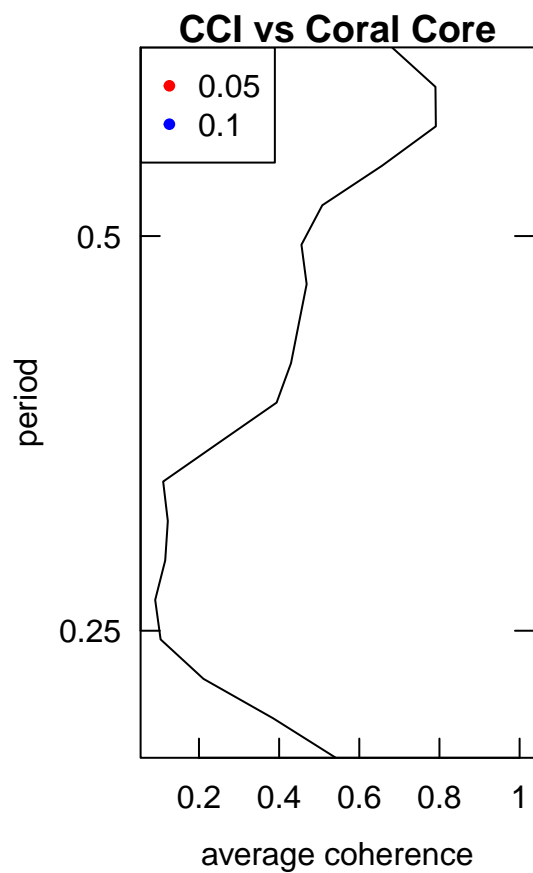
Annual Coral Core Proxy Sites - Period of one represents 10 years

TNT07C

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

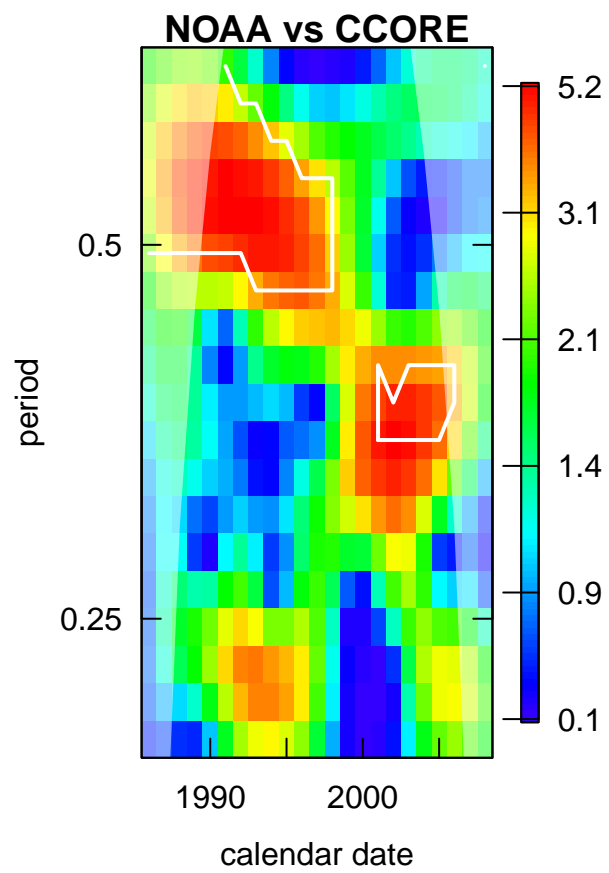
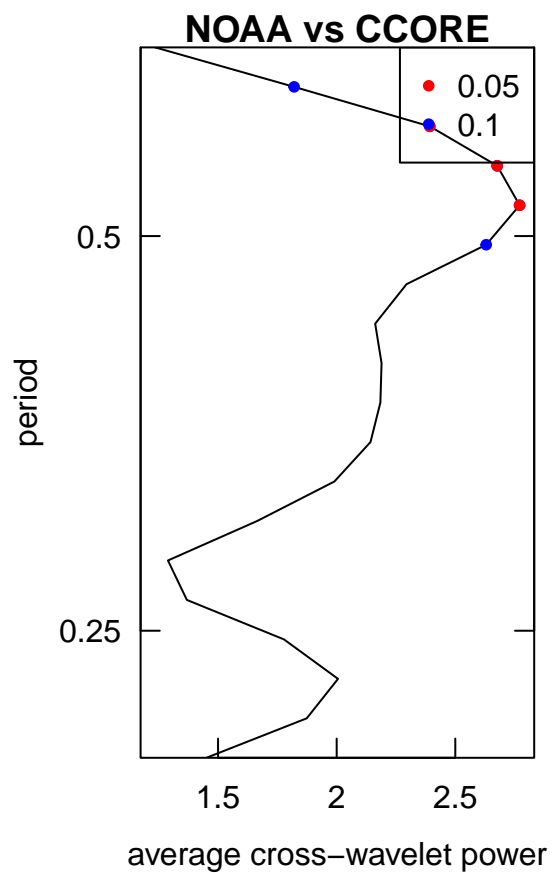
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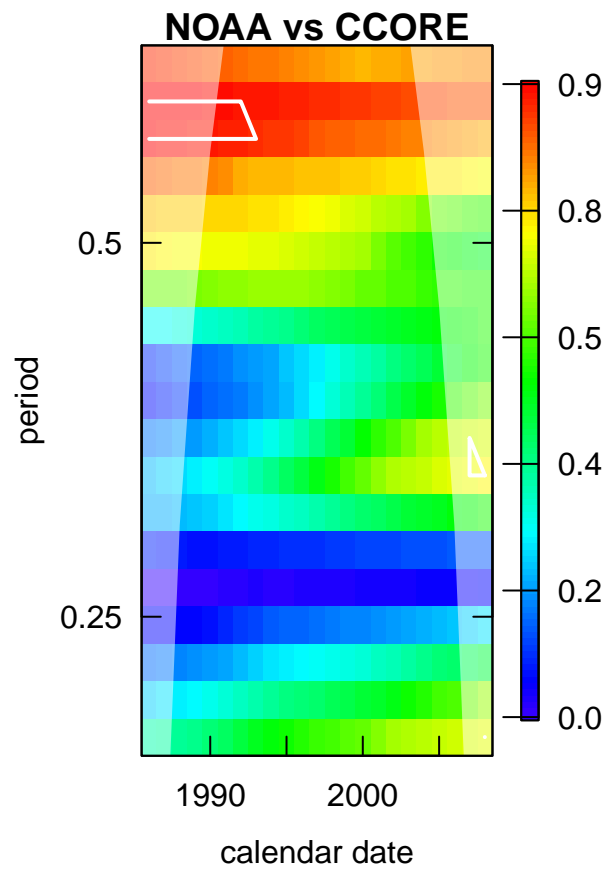
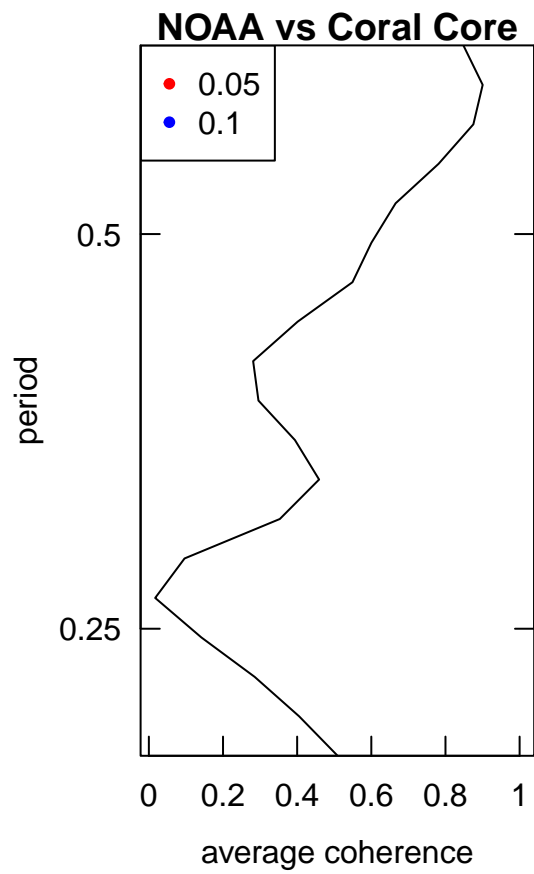




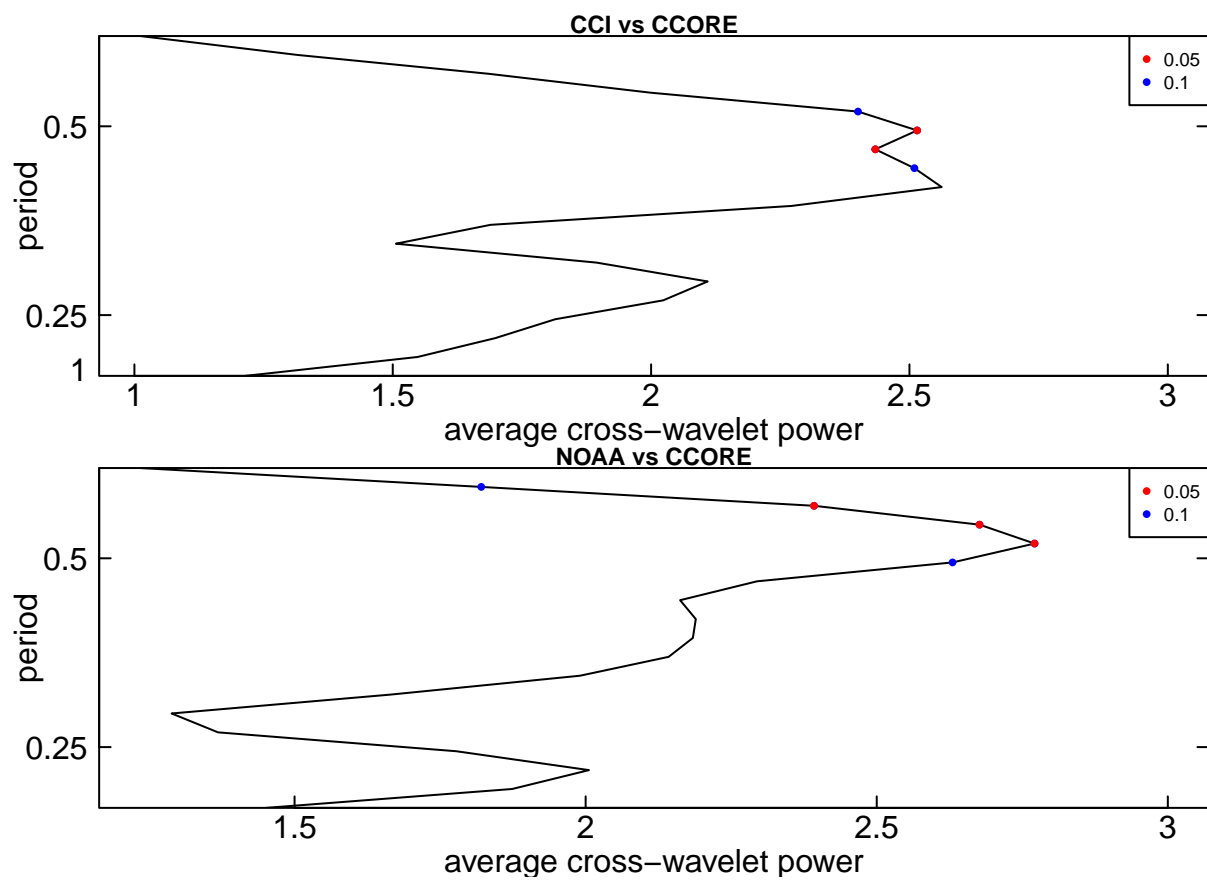
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

|

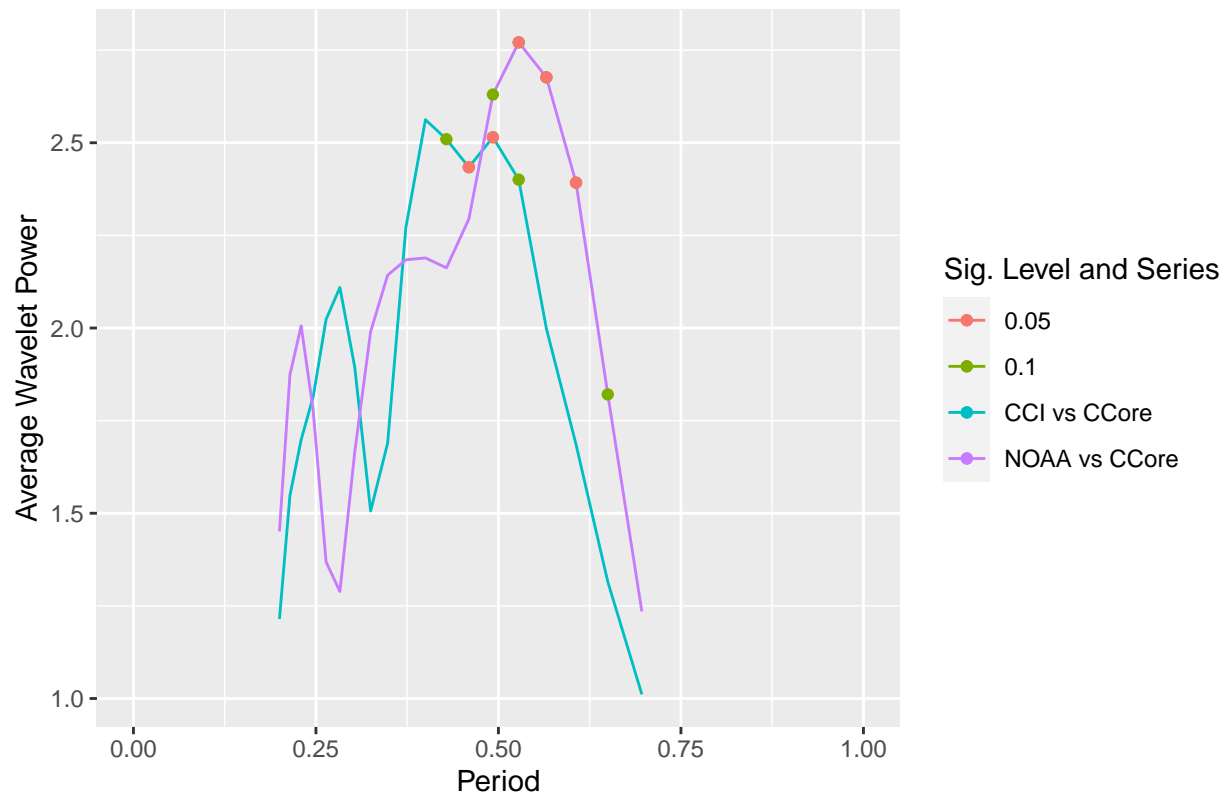








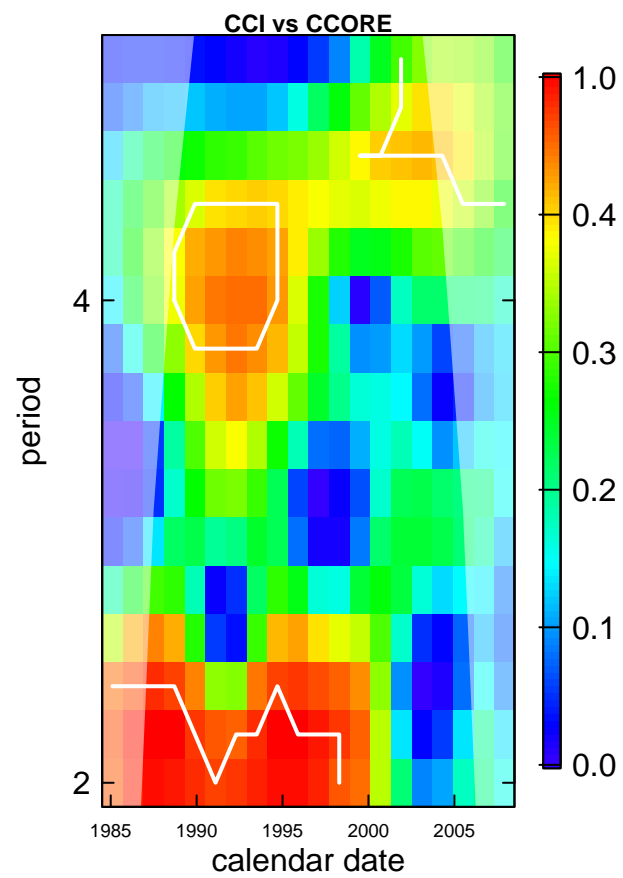
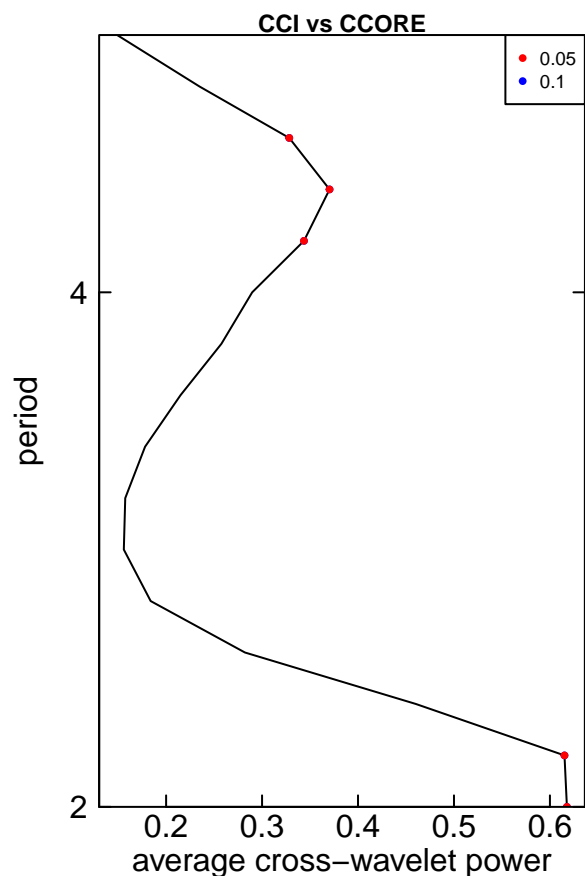
# TNT07C

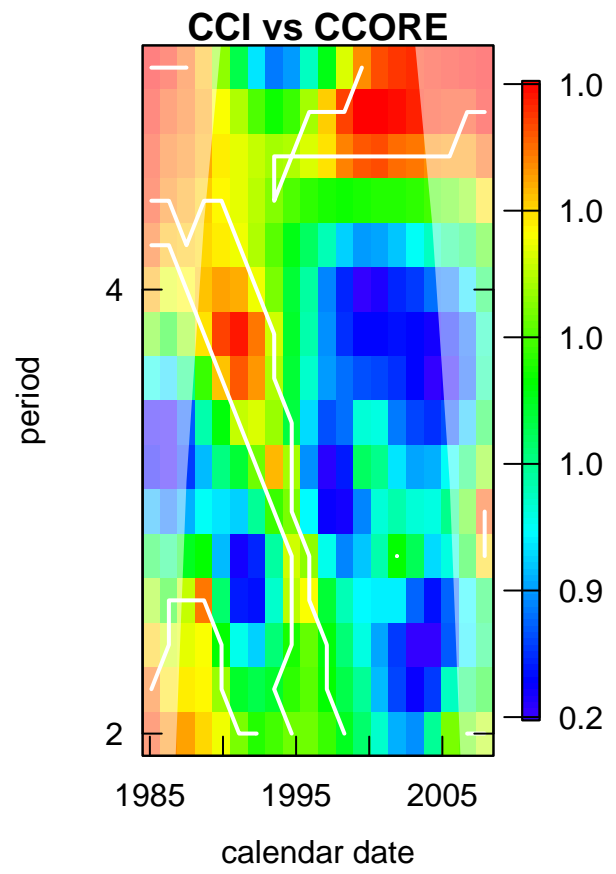
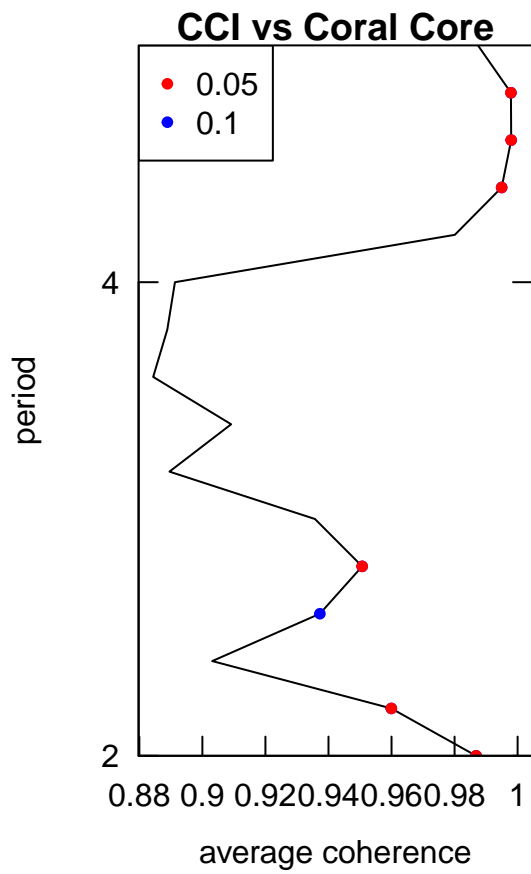


BUN05A

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

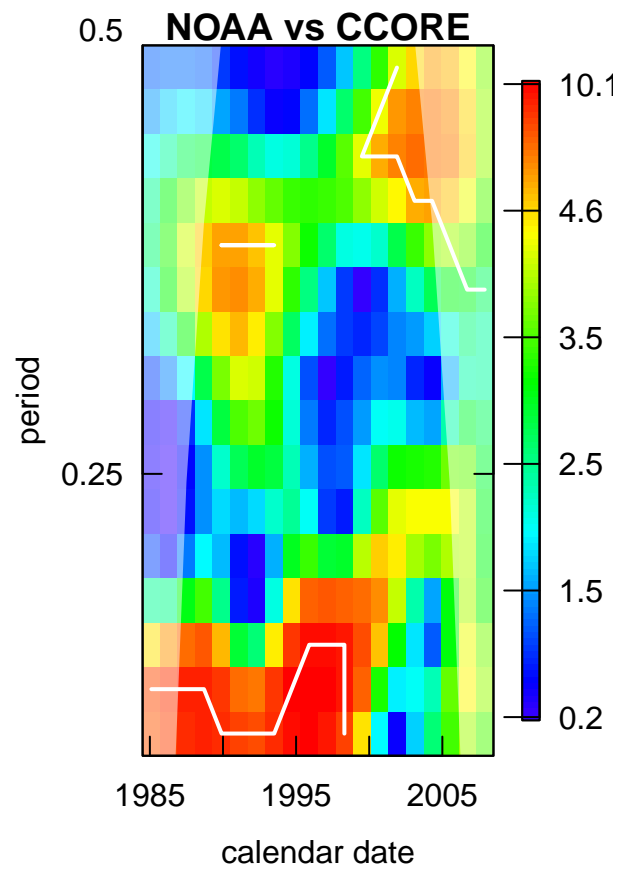
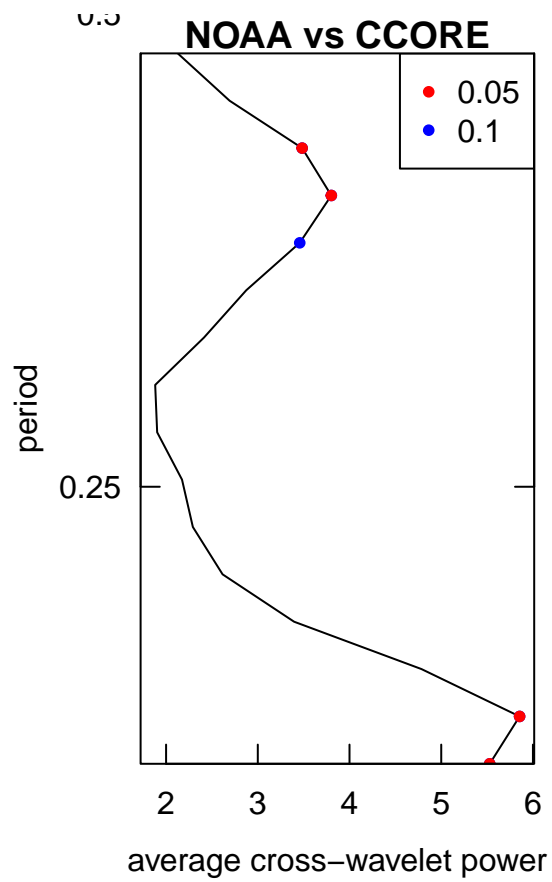
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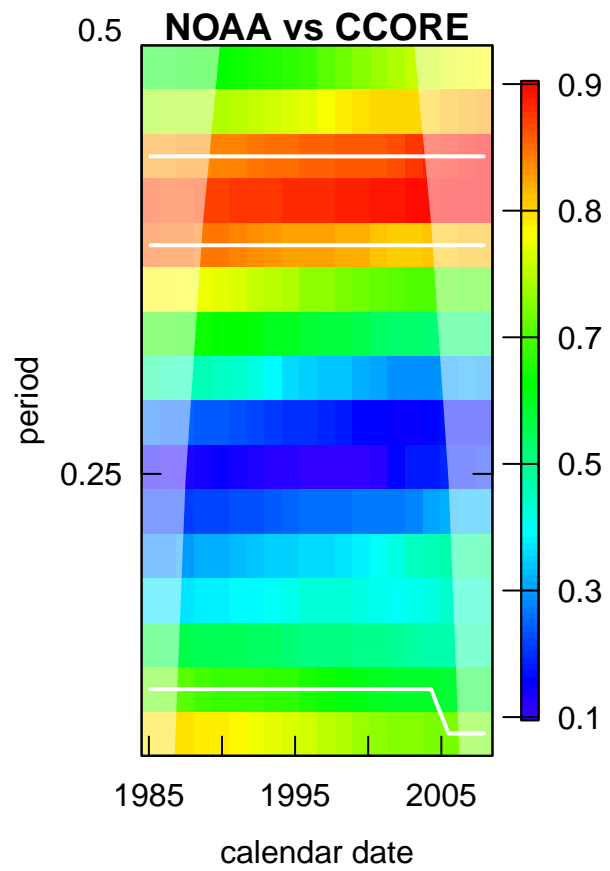
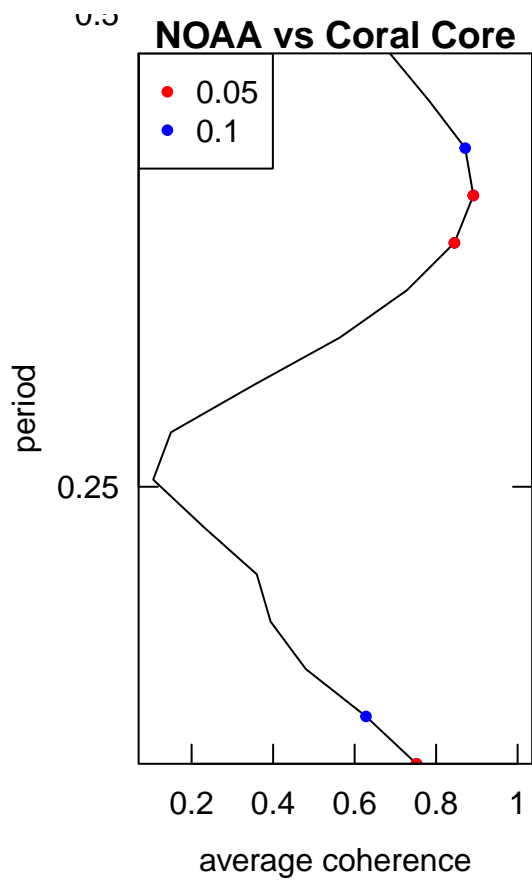


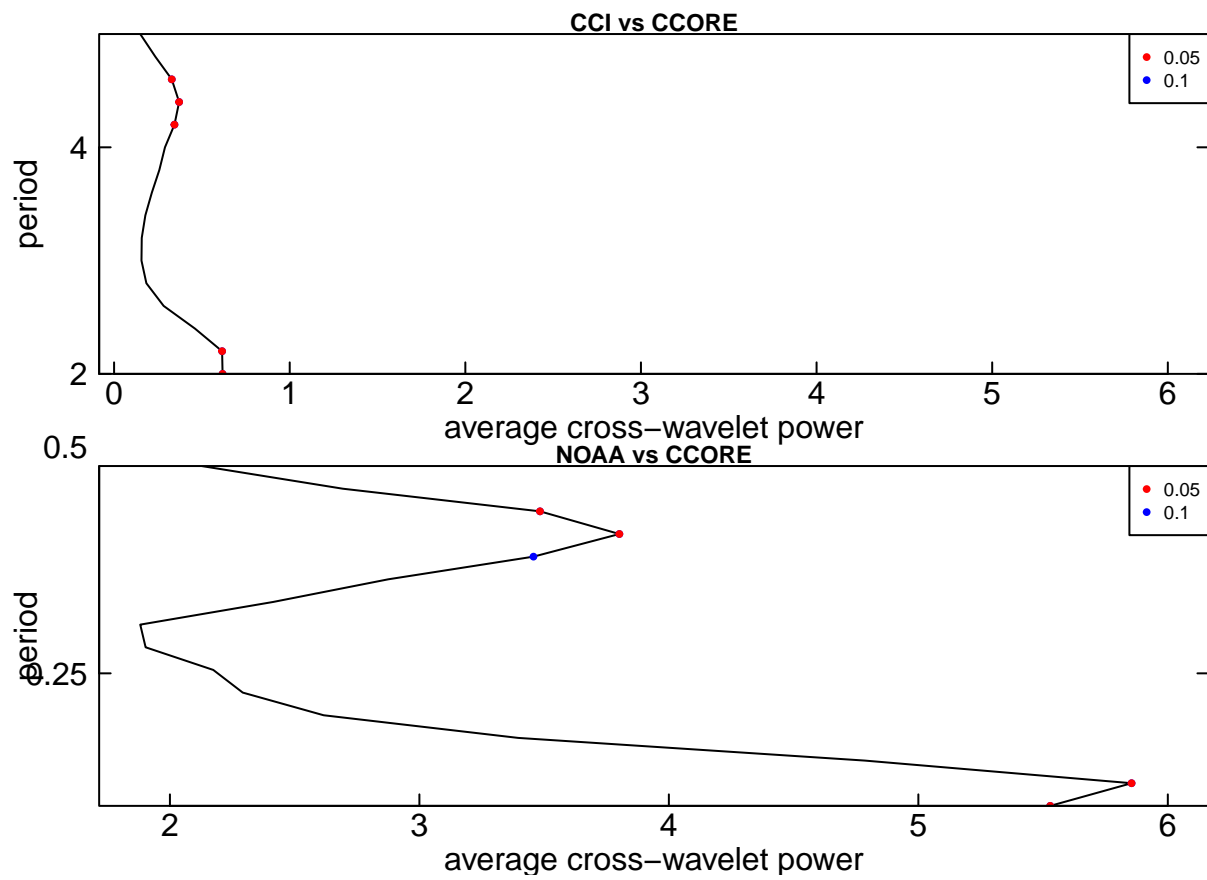


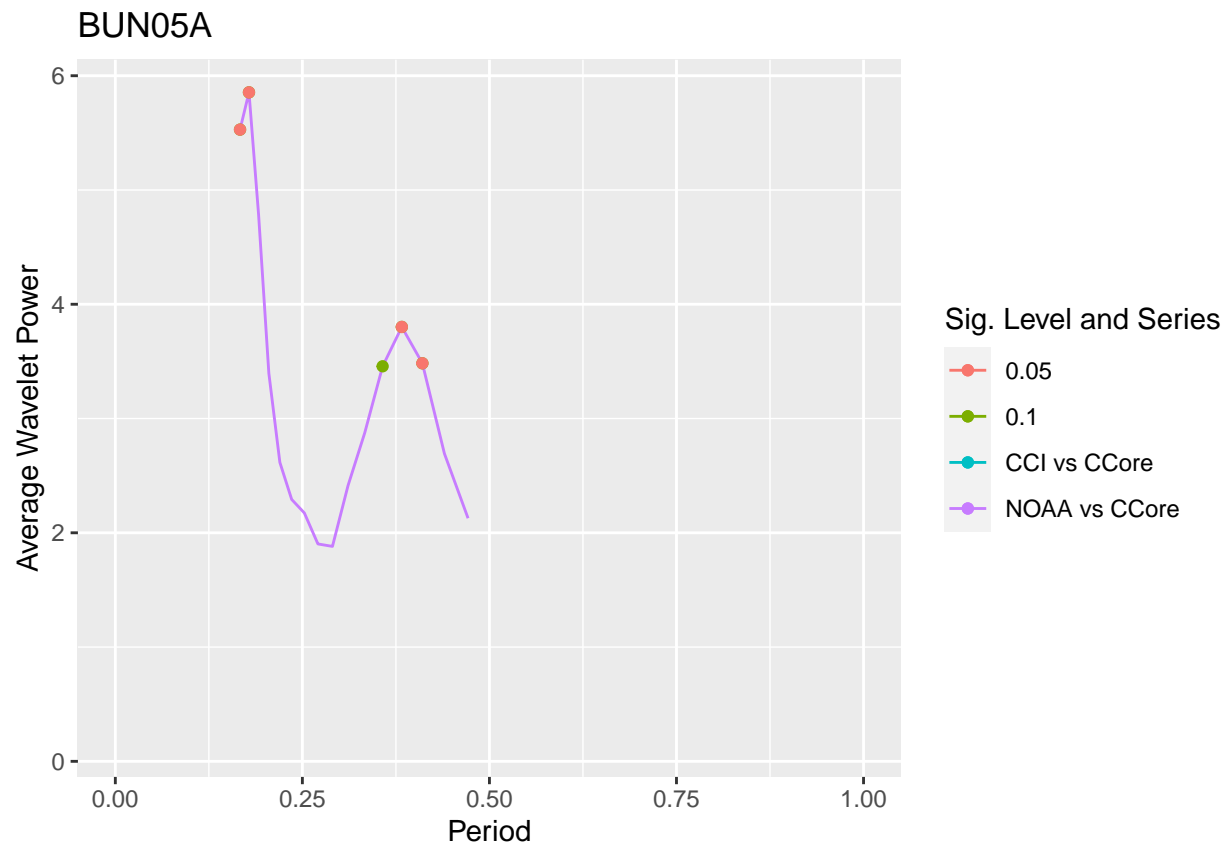
```
## Starting wavelet transformation and coherency computation...
## ... and simulations...
## |
```

|







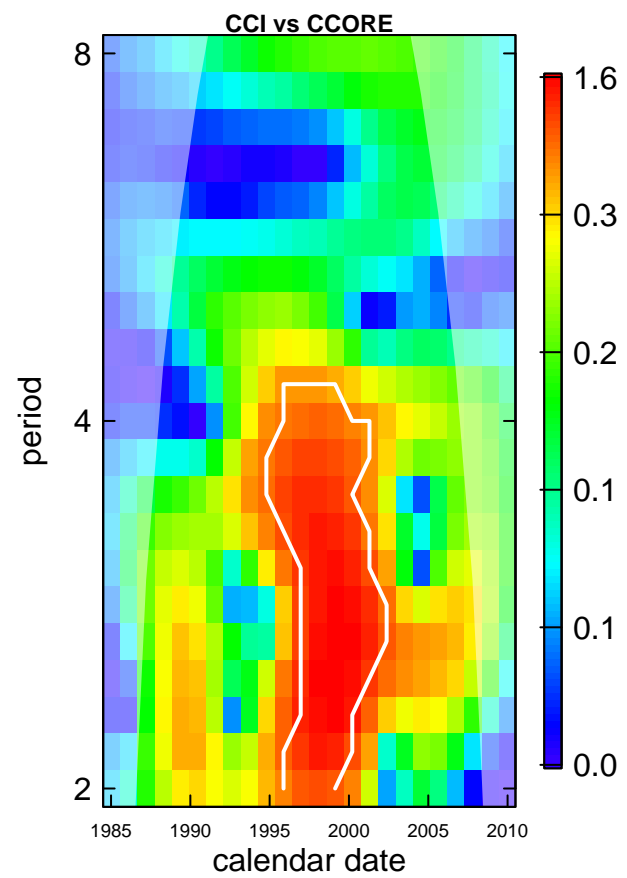
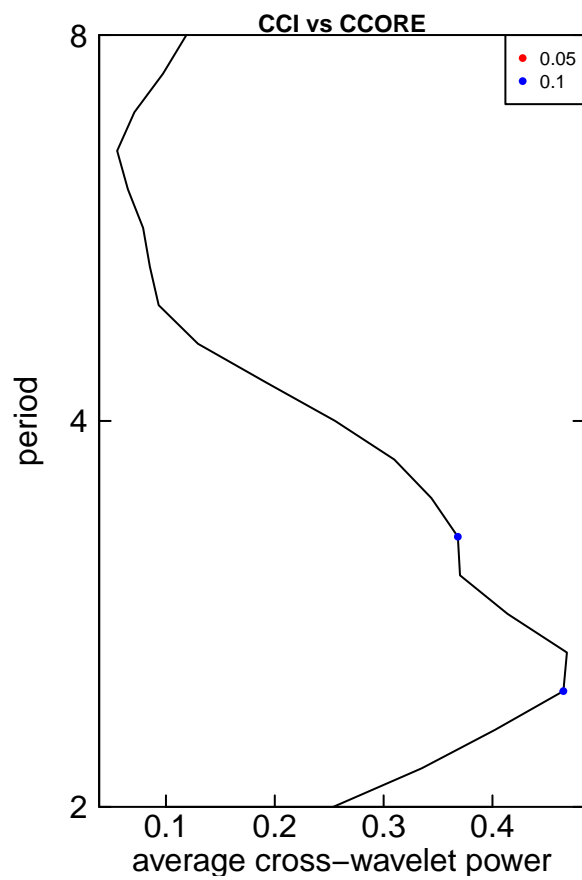


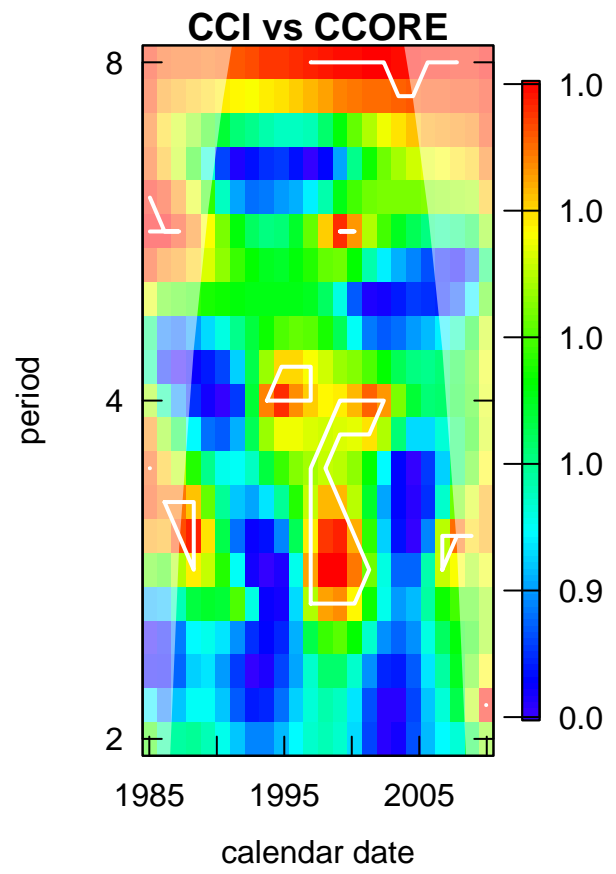
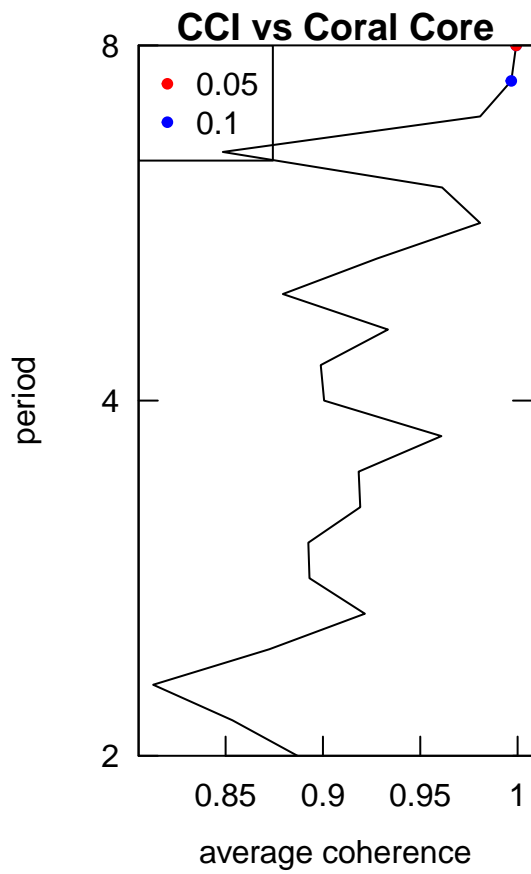


HAB05B

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

|





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

|

