

Tahiti Darwin Anomaly Comparison

<http://www.cgd.ucar.edu/cas/catalog/climind/tahiti.anom.ascii>

<http://www.cgd.ucar.edu/cas/catalog/climind/darwin.anom.ascii>

Darwin

1.,-0.1,0.9,0.3,-0.2,0.8,0.3,0.4,-0.1,0.,0.,0.5
...
-0.2,0.8,-1.1,1.3,0.4,1.,0.,1.4,0.3,0.2,0.6,0.4

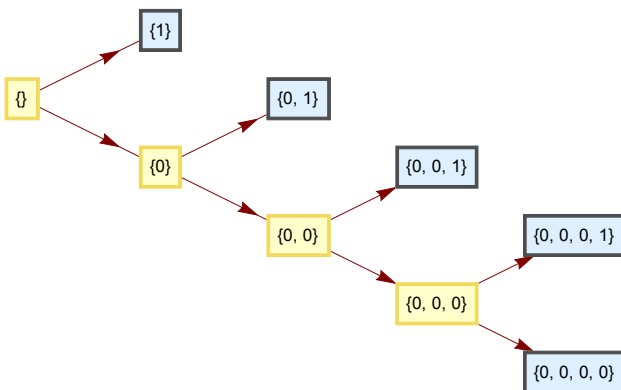
Tahiti

-0.2,-0.3,-0.1,-0.4,0.,-0.1,-0.4,1.,-0.4,0.1,1.5,0.2
...
1.6,1.1,-0.8,0.4,0.1,-0.5,-0.4,0.4,0.7,0.4,0.9,-1.

Wavelet Decomposition

DaubechiesWavelet[4], 4, Padding→"Extrapolated"

Refinement Index



Refinement Index Algebra

$\{\}$ = Raw Signal

$\{1\}$ = $\{0\} + \{1\}$

$\{0\}$ = $\{0, 0\} + \{0, 1\}$

$\{0, 0\}$ = $\{0, 0, 0\} + \{0, 0, 1\}$

$\{0, 0, 0\}$ = $\{0, 0, 0, 0\} + \{0, 0, 0, 1\}$

Darwin Energy Fractions

Out[104]= $\{\{1\} \rightarrow 0.226711, \{0, 1\} \rightarrow 0.120706, \{0, 0, 1\} \rightarrow 0.105509,$
 $\{0, 0, 0, 1\} \rightarrow 0.152306, \{0, 0, 0, 0\} \rightarrow 0.394767\}$

Tahiti Energy Fractions

Out[52]= $\{\{1\} \rightarrow 0.232513, \{0, 1\} \rightarrow 0.171043, \{0, 0, 1\} \rightarrow 0.142122,$
 $\{0, 0, 0, 1\} \rightarrow 0.137091, \{0, 0, 0, 0\} \rightarrow 0.317231\}$

Remark 1: *The Energy Fractions are quite similar between Darwin and Tahiti!*

Correlations

$\{\}$ is the RAW original signal.

Each decomposition index level correlated to the corresponding decomposition:

$\{\}$: -0.253727 entire history

$\{1\}$: 0.0975677 1-9 months

$\{0, 1\}$: -0.0559279 2-10 months

$\{0, 0, 1\}$: -0.122074 4-20 months

$\{0, 0, 0, 1\}$: -0.374646 10-50 months

$\{0, 0, 0, 0\}$: -0.592724 greater than 20 months

