

Comparaison LFP *Fourier* vs STFT/CWT

Sources:
outputs/fourier/phase_monthly/ALL_PHASESETS_MONTHLY_WITH_FOURIER.csv,
outputs/fourier/wavelets/WAVELET_STFT_MONTHLY_METRICS.csv

Méthodes

- STFT: fenêtre Hann nperseg=128, chevauchement=96; période=1/f, exclusion DC/Nyquist; bande LF: périodes \in

64, 4096

barres, normalisation par tranche temporelle.
- CWT: ondelette Morlet *pywt*, num_scales=96; conversion période=1/f avec $f=\text{scale}2\text{frequency}\backslash\text{morl}'*fs$; bande LF identique

64, 4096

barres.
- Agrégations mensuelles: médiane des périodes dominantes; moyenne du ratio LF *partranche*.

BTC_USDT 2h

Corrélations *Pearson* | metric | LFP_mean | STFT_LFP_like | CWT_LFP_like | STFT_domPBars | CWT_domScaleBars | P1Bars_median | | — | — | — | — | — | — | — | | LFP_mean | | | | | | | STFT_LFP_like | | | | | | | CWT_LFP_like | | | | | | | STFT_domPBars | | | | | | | CWT_domScaleBars | | | | | | | P1Bars_median | | | | | | |

Extraits *mois* | month | LFP_mean | STFT_LFP_like | CWT_LFP_like | P1Bars_median | STFT_domPBars | CWT_domScaleBars | | — | — | — | — | — | — | — | | 2017-08 | | 0.1993563921125808 | 0.2257414650171961 | | | 72.71367850156014 | | 2017-09 | 0.8068579617317718 | 0.2005064398107138 | 0.3800497228072139 | 360.0 | | 179.0 | | 2017-10 | 0.927954400015324 | 0.2005932527518561 | 0.3982019575344812 | 360.0 | | 151.29883889098895 | | 2017-11 | 0.9158088500974736 | 0.1987679994422121 | 0.4001900308370238 | 360.0 | | 142.51629196295193 | | 2017-12 | 0.9379054290258084 | 0.2028372260555329 | 0.4076746923652476 | 360.0 | | 146.1804755196683 | | 2018-01 | 0.8880742991400068 | 0.2018323279439728 | 0.4618524203406711 | 360.0 | | 186.0 | | 2018-02 | 0.8489493467811712 | 0.1998481325810837 | 0.3200633557896239 | 360.0 | |

133.99831456087102 | | 2018-03 | 0.915100710879562 | 0.2002168238872671 |
 0.4603641179208496 | 360.0 | | 186.0 | | 2018-04 | 0.9032049193884012 |
 0.2002248232986736 | 0.426440624569149 | 360.0 | | 147.35041727543984 | | 2018-05 |
 0.896454462905632 | 0.1999958092086744 | 0.4463723248032034 | 360.0 | | 186.0 | | 2018-06
 | 0.907610523775187 | 0.2001602240152563 | 0.4223520005188547 | 360.0 | | 177.0 | | 2018-
 07 | 0.8764166798307774 | 0.2007916461915885 | 0.4410537188366521 | 360.0 | | 184.0 | |
 2018-08 | 0.9536264375688536 | 0.2004640898606309 | 0.4411514231617635 | 360.0 | |
 151.29883889098895 | | 2018-09 | 0.9125659593521628 | 0.1991790305204149 |
 0.4166927665714704 | 360.0 | | 147.35041727543984 | | 2018-10 | 0.7642195504965151 |
 0.2000443926421289 | 0.4414442337281564 | 90.0 | | 150.64250119047156 | | 2018-11 |
 0.8988276216659442 | 0.2012627230983446 | 0.3961765333363741 | 360.0 | |
 146.0286469951515 | | 2018-12 | 0.9299927069336528 | 0.1992407608322905 |
 0.3975685370268719 | 360.0 | | 186.0 | | 2019-01 | 0.7952958061312991 |
 0.2002576981666159 | 0.4480137984198409 | 360.0 | | 186.0 | | 2019-02 |
 0.8317583474283382 | 0.2000191223346039 | 0.3959213923870081 | 360.0 | | 168.0 | | 2019-
 03 | 0.8072013449089724 | 0.1999070612902798 | 0.4163491899142512 | 360.0 | |
 149.98547646153688 |

BTC_USDT 1d

Corrélations *Pearson* | metric | LFP_mean | STFT_LFP_like | CWT_LFP_like | STFT_domP_bars |
 CWT_domScale_bars | P1_bars_median | | — | — | — | — | — | — | — | | LFP_mean | | | | | |
 STFT_LFP_like | | | | | | CWT_LFP_like | | | | | | STFT_domP_bars | | | | | |
 CWT_domScale_bars | | | | | | P1_bars_median | | | | | |

Extraits *mois* | month | LFP_mean | STFT_LFP_like | CWT_LFP_like | P1_bars_median |
 STFT_domP_bars | CWT_domScale_bars | | — | — | — | — | — | — | — | | 2017-08 | |
 0.1881644738853603 | | | | | 2017-09 | 0.8214108437435578 | 0.2384379344869674 | | 30.0 | |
 | | 2017-10 | 0.9397246263166726 | 0.275103404380762 | | 30.0 | | | 2017-11 |
 0.9265369224258688 | 0.2002021265454739 | | 30.0 | | | 2017-12 | 0.9543458907626876 |
 0.202205373132875 | | 30.0 | | | 2018-01 | 0.9106801527010948 | 0.180383309682329 | | 30.0
 | | | 2018-03 | 0.9295093242064963 | 0.2232094435308551 | | 30.0 | | | 2018-04 |
 0.9348016507847204 | 0.2019934066906505 | | 30.0 | | | 2018-05 | 0.8737588703458946 |
 0.1858118922028956 | | 30.0 | | | 2018-06 | 0.9167450938948348 | 0.2118495233613109 | |
 30.0 | | | 2018-07 | 0.8941993276827573 | 0.1939645095896707 | | 30.0 | | | 2018-08 |
 0.9601068810843144 | 0.2089147143460626 | | 30.0 | | | 2018-09 | 0.9469596464322874 |
 0.2377320651704716 | | 30.0 | | | 2018-10 | 0.8241505420406448 | 0.1753938989956639 | |
 10.0 | | | 2018-11 | 0.9178852724449514 | 0.1949341374214795 | | 30.0 | | | 2018-12 |
 0.9380242403526216 | 0.1903753580922065 | | 30.0 | | | 2019-01 | 0.7827012768786642 |
 0.1889936149017743 | | 30.0 | | | 2019-03 | 0.7764778233512576 | 0.1951058896644076 | |

30.0 |||| 2019-04 | 0.9193115304624756 | 0.2089483204770557 || 30.0 |||| 2019-05 |
0.903564848926176 | 0.2247197119419898 || 30.0 |||

BTC_USD 2h

Corrélations *Pearson* | metric | LFP_mean | STFT_LFP_like | CWT_LFP_like | STFT_domPBars |
CWT_domScaleBars | P1Bars_median || — | — | — | — | — | — | — || LFP_mean |||||
STFT_LFP_like ||||| CWT_LFP_like ||||| STFT_domPBars |||||
CWT_domScaleBars ||||| P1Bars_median |||||

Extraits *mois* | month | LFP_mean | STFT_LFP_like | CWT_LFP_like | P1Bars_median |
STFT_domPBars | CWT_domScaleBars || — | — | — | — | — | — | — || 2011-08 ||
0.2017610996810815 | 0.2964628432748972 || 81.0 || 2011-09 | 0.9038724326812788 |
0.2010950073034811 | 0.4539115744736468 | 360.0 || 180.0 || 2011-10 |
0.8537570766658452 | 0.2028689356084574 | 0.4813657035855038 | 360.0 ||
151.29883889098895 || 2011-11 | 0.745666535019054 | 0.194009505779524 |
0.4271942948803762 | 270.0 || 142.51629196295193 || 2011-12 | 0.4019247625387251 |
0.2001235904944869 | 0.3650009484422962 | 180.0 || 186.0 || 2012-01 |
0.8609206121797317 | 0.2018415528916941 | 0.461166276596482 | 360.0 || 186.0 || 2012-02
| 0.7020831364708198 | 0.1996497270816489 | 0.4063569889191224 | 360.0 || 174.0 || 2012-
03 | 0.8093336091980972 | 0.200323302560346 | 0.4380448330447883 | 360.0 ||
151.29883889098895 || 2012-04 | 0.7876201754677972 | 0.1999763994176636 |
0.422470355998352 | 360.0 || 180.0 || 2012-05 | 0.8093084462190907 | 0.1996960858288881
| 0.431780649173844 | 180.0 || 186.0 || 2012-06 | 0.913251312311688 | 0.200388782998386 |
0.4027686197966393 | 360.0 || 180.0 || 2012-07 | 0.8976292488954137 |
0.2001763006560908 | 0.4060335096882829 | 360.0 || 151.29883889098895 || 2012-08 |
0.8863052830420209 | 0.200683595895037 | 0.4635736563016256 | 360.0 ||
151.29883889098895 || 2012-09 | 0.867834546961877 | 0.2008887693358047 |
0.4083076028557931 | 180.0 || 180.0 || 2012-10 | 0.8127047708222802 |
0.1996355406300693 | 0.4126723458457196 | 360.0 || 186.0 || 2012-11 |
0.8813311790523218 | 0.1997530428225717 | 0.4260465483872874 | 360.0 || 180.0 || 2012-
12 | 0.9326421682128718 | 0.2003117129415494 | 0.4327862708220601 | 360.0 || 186.0 ||
2013-01 | 0.8143785544823483 | 0.1998031395626712 | 0.4000373133086209 | 360.0 || 186.0
|| 2013-02 | 0.9572229453777392 | 0.1990914313007241 | 0.3960637699240596 | 360.0 ||
139.375834348876 || 2013-03 | 0.9380858972799224 | 0.2019010855417009 |
0.4290518658883981 | 360.0 || 186.0 |

BTC_USD 1d

Corrélations *Pearson* | metric | LFP_mean | STFT_LFP_like | CWT_LFP_like | STFT_domPBars |
 CWT_domScaleBars | P1Bars_median | | — | — | — | — | — | — | — | | LFP_mean | | | | | | |
 STFT_LFP_like | | | | | | | CWT_LFP_like | | | | | | | STFT_domPBars | | | | | | |
 CWT_domScaleBars | | | | | | | P1Bars_median | | | | | | |

Extraits *mois* | month | LFP_mean | STFT_LFP_like | CWT_LFP_like | P1Bars_median |
 STFT_domPBars | CWT_domScaleBars | | — | — | — | — | — | — | — | | 2021-12 | |
 0.1878476662168029 | | | | | 2022-01 | 0.9372739859399124 | 0.2028845396661465 | | 30.0 | |
 | | 2022-02 | 0.945965540388036 | 0.2269501353842325 | | 30.0 | | | 2022-03 |
 0.8603317318605431 | 0.2076367163168349 | | 15.0 | | | 2022-04 | 0.9369929543385184 |
 0.1908482337628487 | | 30.0 | | | 2022-06 | 0.8581621320913234 | 0.1891518300081288 | |
 30.0 | | | 2022-07 | 0.9197598547917584 | 0.2128544305737042 | | 15.0 | | | 2022-08 |
 0.8607446988593143 | 0.1902328908634479 | | 15.0 | | | 2022-09 | 0.911951408823244 |
 0.2103145734109447 | | 30.0 | | | 2022-10 | 0.8591683424807719 | 0.1901641896745823 | |
 30.0 | | | 2022-11 | 0.9265845205200792 | 0.1805570392435085 | | 30.0 | | | 2023-01 |
 0.93536505251893 | 0.2177845406755235 | | 30.0 | | | 2023-02 | 0.9006153065159268 |
 0.1924482746084932 | | 30.0 | | | 2023-03 | 0.944898869696684 | 0.2148150246224144 | |
 30.0 | | | 2023-04 | 0.8773929892843558 | 0.2067457937331919 | | 30.0 | | | 2023-05 |
 0.912433602092503 | 0.1876826235609842 | | 30.0 | | | 2023-06 | 0.7952904696296403 |
 0.2125331303339604 | | 30.0 | | | 2023-08 | 0.8452222002302147 | 0.2053305742386278 | |
 30.0 | | | 2023-09 | 0.8006719192607116 | 0.1847096287980784 | | 30.0 | | | 2023-10 |
 0.8728789012823186 | 0.1896616325612032 | | 30.0 | | |