OUTLIER DETECTION AMPLITUDE

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21 de agosto de 2019

Amplitude indexes

Index MUOD amplitude

Index MUOD amp

$$I_{A_1} = \left| \frac{1}{n} \sum_{j=1}^{n} \frac{Cov(x, x_j)}{var(x_j)} - 1 \right|$$

Index tau-kendall per MAD

$$I_{A_2} = \left| \frac{1}{n} \sum_{j=1}^{n} \tau(x, x_j) \cdot MAD(x) \right|$$

Index biweight per MAD

```
## $MEASURES.MUODAMP
##                     c          f          F
## boxplot      96.68683 0.06317890 0.9747454
## adjboxplot   40.68214 0.00000000 0.4457185
## adjout        0.00000 0.00000000 0.0000000
## meanvar      96.62724 0.03051130 0.9727937
## carlings     92.45588 0.04212393 0.9480237
## madmedian    89.98636 0.07392684 0.9295695
## ifourths     96.68683 0.06317890 0.9747454
## tangent     100.00000 5.75549578 0.6710420
##
## $MEASURES.KENDALL
##                     c          f          F
## boxplot      84.21093 0.01063830 0.8855622
## adjboxplot   24.35595 0.04189515 0.2690087
## adjout        0.00000 0.00000000 0.0000000
## meanvar      95.89784 0.01010101 0.9722729
## carlings     65.12233 0.01063830 0.7277668
## madmedian    54.03380 0.01063830 0.6103335
## ifourths     83.24307 0.01063830 0.8797471
## tangent     100.00000 7.99110729 0.5818759
##
## $MEASURES.BIWEIGHT
##                     c          f          F
## boxplot      92.80032 0.01063830 0.9528216
## adjboxplot   70.95556 0.31495881 0.7302613
## adjout        0.00000 0.00000000 0.0000000
## meanvar      95.45339 0.01010101 0.9695976
## carlings     74.02799 0.00000000 0.8164772
```

```
## madmedian   55.05058 0.00000000 0.6377481
## ifourths     92.67532 0.01063830 0.9519424
## tangent      99.00000 6.84831861 0.5877430
```