

## LIST OF SYMBOLS

### SYMBOL

|                            |   |
|----------------------------|---|
| $D$                        | Dimension   |
| $D_B$                      | Dimension for box-counting method                       |
| $D_{HM}$                   | Dimension for Higuchi method                            |
| $D_{HSEM}$                 | Dimension for horizontal structuring element method     |
| $D_{RS}$                   | Dimension for rescale range analysis                    |
| $D_v$                      | Dimension for variation method                          |
| $D_\alpha$                 | Dimension for scaling property of variance              |
| $E_k$                      | Line segment of unit length                             |
| $F$                        | von Koch curve  |
| $H$                        | Hurst exponent  |
| $L(k)$                     | Length of each curve                                    |
| $N$                        | Number of pieces  |
| $N(\varepsilon_k)$         | Number of pixels that covering the curve                |
| $R$                        | Reduction factor  |
| $R(\tau)$                  | Range   |
| $S(\tau)$                  | Standard deviation                                      |
| $U(\varepsilon)$           | Total area (union) that covering the horizontal segment |
| $V$                        | Total area covered along the curve                      |
| $k$                        | Length of the horizontal segment                        |
| $m$                        | Number of initial time                                  |
| $\max_{new}$               | Average of maximum value                                |
| $\min_{new}$               | Average of minimum value                                |
| $t$                        | Time  |
| $\alpha$                   | Order of the number of the time series signal           |
| $\Delta_{\max}$            | Maximum value change                                    |
| $\Delta_{\min}$            | Minimum value change                                    |
| $\varepsilon$              | Size of the pixels                                      |
| $\xi(t)$                   | Time series data  |
| $\langle \xi \rangle_\tau$ | Average   |
| $\sigma$                   | Variance of amplitude                                   |
| $\tau$                     | Length of time increment                                |