The Recursive Future Equation

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Abstract

In this research investigation, the author has presented a Recursive Future Equation.

Theory

Given a Time Series $Y = \{y_1, y_2, y_3, ..., y_{n-1}, y_n\}$

we can find y_{n+1} using the following Recursive Equation.

Consider

$S_1 = Smaller\ of\ (y_{n+1}, y_k)$ and

$L_1 = Larger\ of\ (y_{n+1}, y_k)$

$S_2 = Smaller\ of\ ((L_1 - S_1), y_k)$

$L_2 = Larger\ of\ ((L_1 - S_1), y_k)$

$$S_3 = Smaller\ of\ \left(\left(L_2 - S_2 \right), y_k \right)$$

$$L_3 = Larger\ of\ \left(\left(L_2 - S_2 \right), y_k \right)$$

And so on, so forth

$$S_p = Smaller\ of\ \left(\left(L_p - S_p \right), y_k \right)$$

$$L_p = Larger\ of\ \left(\left(L_p - S_p \right), y_k \right)$$

$$y_{n+1} = \left\{ \sum_{k=1}^{n} y_k \left\{ \frac{S_1}{L_1} \right\} \right\} + \left\{ \sum_{k=1}^{n} y_k \left\{ \frac{S_2}{L_2} \right\} \right\} + \left\{ \sum_{k=1}^{n} y_k \left\{ \frac{S_2}{L_2} \right\} \right\} + \ldots\ldots\ldots + \left\{ \sum_{k=1}^{n} y_k \left\{ \frac{S_p}{L_p} \right\} \right\}$$

That is,

$$y_{n+1} = \lim_{p \to \infty} \left\{ \sum_{k=1}^{n} y_k \left\{ \left\{ \frac{S_1}{L_1} \right\} + \left\{ \frac{S_2}{L_2} \right\} + \left\{ \frac{S_3}{L_3} \right\} + \ldots\ldots + \left\{ \frac{S_p}{L_p} \right\} \right\} \right\}$$

From the above Recursive equation, we can solve for y_{n+1}

References

1. http://www.vixra.org/author/ramesh_chandra_bagadi
2. http://www.philica.com/advancedsearch.php?author=12897