

## On Parameter Estimation of Simultaneous Linear Functional Relationship Model for Circular Variables

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**Abstract :** This paper proposes a new simultaneous simple linear functional relationship model by assuming equal error variances. We derive the maximum likelihood estimate of the parameters in the simultaneous model and the covariance. We show by simulation study the small bias values of the parameters suggest the suitability of the estimation method. As an illustration, the proposed simultaneous model is applied to real data of the wind direction and wave direction measured by two different instruments.

**Keywords :** simultaneous linear functional relationship model, Fisher information matrix, parameter estimation, circular variables

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