Gmail Shicheng Guo <shihcheng.guo@gmail.com>

SII1603-004 Review Acknowledgment

1 message

Momiao Xiong <momiao.xiong@uth.tmc.edu> Fri, May 13, 2016 at 1:15 PM
To: Shicheng Guo <guoshicheng2005@gmail.com>

Dear Shicheng Guo,

Thank you for completing the review of the submission
SII1603-004 to Statistics and Its Interface.
We appreciate your contribution to the quality of the work that we publish.

Momiao Xiong,

Submission URL: http://www.e-publications.org/ip/sbs/SII/

Title:
Detection of Threshold Points for Gene Expressions under Multiple Biological Conditions

Authors:
Dianliang Deng, Hongbin Fang, Kian Razeghi Jahromi, Jiuzhou Song, Ming Tan

Abstract:
Temporal gene expression data are of importance in the classifications of gene functions and have been extensively used in biomedical studies, such as cancer diagnostics. However, since temporal gene expressions vary over time, after the initial time periods, many genes exhibit some kind of stability, which means that gene expressions keep constant or fluctuate slightly after those time points. Thereby, this threshold point is a key in the study of behaviours of gene expressions, which can be used to decide the measuring time period and to distinguish the gene expressions. In this paper three methods are presented to detect the threshold points for the gene expressions. In particular, the first-order and second-order change rates are used to construct the test statistics for detecting the threshold points. The simulation study shows that the proposed methods have a good performance for the detection of threshold points. A real dataset with 21 genes in P. aeruginosa expressed in 24 biological conditions is used to illustrate the proposed methodology.