

Department of Systems Engineering and Engineering Management

Seminar Series

Monitoring Profiles Based on Proportional Odds Models

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Date	8 August 2014 (Friday)
Time	10:30am (Tea/Coffee service at 10:15am)
Venue	B6619, 6/F, AC1

Abstract

In this talk, the quality of a process or product is described by a relationship (or profile) between the response variable and one or more explanatory variables. Based on the characteristic of the response variable which is both categorical and ordinal, the relationship is characterized by a proportional odds model. Two EWMA-type control charting schemes for monitoring such profiles in Phase II study are proposed. Simulation studies are conducted to evaluate the performance of these two control charts. Furthermore, a diagnostic method is employed to estimate the change point location of the process and to identify the parameters of change in the profile once the control charts trigger a signal. Finally, an example from wine industry is used to illustrate the implementation of the proposed charting schemes and the diagnostic method.

About the Speaker

Prof. Longcheen Huwang received his PhD in Statistics from Cornell University in 1991. Since then, he has been a regular faculty of National Tsing Hua University in Taiwan. Currently, he is a full professor of Institute of Statistics. Prof. Huwang is an elected member of International Statistical Institute. He had been the director of Institute of Statistics at National Tsing Hua University from August 2003 to July 2006 and from August 2011 to July 2012. His current research interests lie in industrial statistics, especially statistical process control. He has published many research papers in the leading journals, such as *Annals of Statistics*, *Technometrics*, *Journal of Quality Technology*, *Journal of*

Multivariate Analysis, Statistica Sinica, Canadian Journal of Statistics, IIE Transactions, Naval Research Logistics, etc.

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All are Welcome!

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