

UNIVERSITY OF MACAU  
FACULTY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT of  
CIVIL AND ENVIRONMENTAL ENGINEERING

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**" Probability Distribution Modelling of Data and  
Its Applications in Structural Health Monitoring**

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by

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**Time: 11:00AM – 12:00PM**  
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## Abstract

Probability distribution modelling of data is an important task in science and engineering. This research attempts to conduct probability distribution modelling of univariate and multivariate data. The first part introduces the theories of the traditional Bayesian inference and the Bayesian Network for probability distribution modelling. The second part introduced the structural health monitoring system of the Xinguang Bridge, which is a three-span half-through arch bridge with the mid span of 428 m, two side spans of 177 m each, and width of 37.62 m, over the Pearl River of Guangzhou City of China. The third part is devoted to the probability distribution modelling of the traffic load effect data and modal frequency–multiple environmental factor data of the Xinguang Bridge.

## Biography

Prof. He-Qing MU is an Associate Professor of Civil Engineering Department of South China University of Technology. He serves as the corresponding member of the Engineering Practice of Risk Assessment and Management Committee of the International Society of Soil Mechanics and Geotechnical Engineering, the Member of Youth Committee of Structural Control & Health Monitoring, Youth Committee of Random Vibration, of Chinese Society for Vibration Engineering. He received his Ph.D. in civil engineering from University of Macau. He was a visiting scholar of California Institute of Technology (Caltech) and University of California, Berkeley (UC Berkeley). He has obtained funding for several research projects, including NSFC, Natural Science Foundation of Guangdong Province; Foundation of the State Key Laboratory of Subtropical Building Science, etc. In 2018, he was elected as the recipient of the Pearl River S&T Nova Program of Guangzhou (珠江科技新星). His research interests include Bayesian Inference, Earthquake Engineering, Robust Data Analysis, Structural Health Monitoring.

***ALL ARE WELCOME!***