Program to this Workshop

1. From I Ching to Decision Making under Interval Uncertainty

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The need for help in decision making has been recognized since ancient times. One of first approaches is described in the ancient Chinese I Ching (Book of Changes): the oldest manuscript that has been found dates back to the Warring States Period (475-221 BCE) and parts of the text date from the 2nd millennium BCE(and maybe even earlier). From the modern viewpoint, the main features of the I Ching approach to decision making are: the use of randomness and the use of binary code (0-1, yin-yang). As we will see, both features are still important in decision making.

2. Shrinkage estimation of covariance matrix for portfolio

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In the Markowitz's mean-variance model, the portfolio is a function of the mean and covariance matrix. In the practical problems, the mean and covariance matrix are unknown, and need to be estimated. The previous studies have shown that the estimation of the covariance matrix is more important for the portfolio. However, the research on the shrinkage estimation of covariance matrix for portfolio is falling behind that only on covariance matrix. The purpose of this paper is to apply the Stein's shrinkage method to estimate the portfolio. Under the criterion of minimum the opportunity cost, we want to find a good way to construct shrinkage estimation.

INTERNATIONAL WORKSHOP ON APPLIED MATHEMATICS AND STATISTICS

西北农林科技大学

应用数学与统计国际研讨会

时间：2013年5月29日至30日

地点：西北农林科技大学南校区报告厅104

举办单位：西北农林科技大学后稷学者基金、理学院、创新学院