“PBD Closed Sets and the Existence and Constructions of Designs”

SPEAKER: Dr Shen Hao, Shanghai Jiao Tong University

Abstract:
Let \( v \) be a positive integer and \( K \) be a set of positive integers, a pairwise balanced design, denoted \( B(K, 1; v) \), is a pair \((X, A)\) where \( X \) is a \( v \)-set and \( A \) is a set of subsets (called blocks) such that number of points contained in any block is an integer of \( K \). Now let \( B(K) = \{v: \text{there exists a } B(K, 1; v)\} \). \( K \) is called a PBD closed set if \( B(K)=K \).

PBD closed sets play an important role in the study of existence and construction of combinatorial designs. In this talk, we will show how PBD closed sets can be used in the construction of various kinds of designs, including block designs, group divisible designs and resolvable designs.

About the speaker:
Dr Shen Hao obtained his PhD in Mathematics from the Universite Libre de Bruxelles, Bruxelles, Belgium, in 2001. He is currently a Professor in the Department of Mathematics at the Shanghai Jiao Tong University. His research interests include design theory, finite geometry and coding theory.

Date : Friday, 6 October 2006
Time : 4.00pm to 5.00pm
Venue : Chemistry Computational Lab
         (LT19A-B4-01)
Host : Prof Ling San

ALL ARE WELCOME!