Linked systems of designs and Q-antipodal association schemes

William J. Martin

Department of Mathematical Sciences

Worcester Polytechnic Institute, USA

Linked systems of symmetric designs were studied by Cameron, by Cameron and Seidel, and later by Noda and then Mathon. Higman later studied linked systems of strongly regular designs. In both cases, there is a cometric (or Q-polynomial) association scheme underlying the entire structure and we propose to study this case, which we call "uniform cometric schemes". Many interesting examples are known for these designs but, for many parameter sets, existence remain open. This talk is based on joint work with Edwin van Dam (Tilburg) and Mikhail Muzychuk (Netanya).