Tactical decomposition of designs

Anamari Nakić

University of Zagreb

We address tactical decomposition of t-(v, k, λ_t) designs and designs over finite fields. Equations for coefficients of tactical decomposition matrices when $t = 2$ are well-known. In this talk, we generalize these equations and propose an explicit equation system for coefficients of tactical decomposition matrices for t-(v, k, λ_t) designs, for any integer value of t. This system of equations for coefficients of tactical decomposition matrices represents necessary conditions for the existence of t-designs with an assumed automorphism group. We will briefly discuss how this equation system can be used for computational construction of t-designs with an assumed automorphism group. Finally, we present our recent results on tactical decomposition of designs over finite fields.