Euclidean designs from spherical embedding of Q-polynomial coherent configurations

Yan Zhu

University of Shanghai for Science and Technology

zhuyan@usst.edu.cn

Coherent configurations are the generalization of association schemes. It is known that the spherical embedding of Q-polynomial association schemes can form spherical t-designs. The concept of Q-polynomial coherent configuration was introduced by Suda in 2022. In this talk, we discuss the spherical embedding of Q-polynomial coherent configuration. We will present a necessary and sufficient condition when the embedding becomes a Euclidean t-design (on two concentric spheres). In addition, if we further assume each fiber is a P-polynomial association scheme, then $t \leq 10$.