## Abstract

In this talk, we first of all derive an improved and general upper bound on the code length of Singleton-optimal LRCs with minimum distance d=5, 6. Secondly, we obtain a complete characterization for Singleton-optimal LRCs with r=2 and d=6. And then we construct three new Singleton-optimal LRCs with large code length via some special structures of projective plane. In the end, we employ the well-known line-point incidence matrix and Johnson bounds for constant weight codes to derive tighter upper bounds on the code length, and the maximal value of the length of Singleton-optimal LRCs for some specific q are also determined.