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Jason S Williford* (jwillif1@uwyo.edu). *Q-polynomial association schemes with at most five classes.*

An association scheme can be thought of as a combinatorial generalization of a transitive finite permutation group. In the 1973 thesis of Philippe Delsarte, the author identified two special classes of association schemes: the so-called P -polynomial and Q -polynomial schemes. The schemes that are P -polynomial are precisely those generated by a distance-regular graph. However, the Q -polynomial schemes have no analogous combinatorial definition. In this talk, we will discuss what is known about primitive 3-class Q -polynomial schemes, and imprimitive Q -polynomial schemes with at most 5 classes. (Received August 15, 2016)