

1106-VQ-2592 **Ilene H Morgan*** (imorgan@mst.edu) and **Rita SahaRay** (rita@isical.ac.in). *Critical sets in equiorthogonal frequency squares.*

In this paper, we study critical sets in pairs of equiorthogonal frequency squares. Using this stronger definition of orthogonality, a pair of equiorthogonal frequency squares is classified into one of three classes depending on the isomorphism or orthogonality of the corresponding rows and columns. We provide a general theorem determining the size of the critical set of a pair of equiorthogonal squares in which the corresponding rows and columns are isomorphic. For the other possible combinations of corresponding rows and columns, we make a few general observations with a detailed investigation into the conditions for the existence of an equiorthogonal mate and the size of a critical set for a pair of squares of order 8 based on 2 symbols. (Received September 16, 2014)