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Fukuoka, Japan. *On Euclidean designs.*

The concept of Euclidean designs was defined by Neumaier and Seidel in 1988 as a generalization of spherical designs. Delsarte and Seidel proved the Fisher type lower bounds for the cardinality of a Euclidean  $2e$ -design and that of an antipodal Euclidean  $(2e + 1)$ -design, and then they gave definitions of Euclidean tight designs. In this talk we examine the definitions of tightness more carefully, and present some new results on the basic properties of tight designs. Moreover, we give the complete classification of the following designs: (1) Euclidean tight 2-designs, (2) Euclidean tight 4-designs supported by 2 concentric spheres, (3) antipodal Euclidean tight 3-designs, and (4) antipodal Euclidean tight 5-designs supported by 2 concentric spheres. Finally we discuss the non-rigidity of Euclidean designs and give some results which have been obtained jointly with Eiichi Bannai and Djoko Suprijanto. (Received August 20, 2005)