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**Aidan Roy\*** ([aroy@qis.ualgary.ca](mailto:aroy@qis.ualgary.ca)), Institute for Quantum Information Science, University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4, Canada. *Delsarte LP bounds for complex systems of lines and subspaces.*

Delsarte's linear programming technique often gives the best known bounds on the size of an error-correcting code or a block design. In many cases when the bounds are tight, the system also has the structure of an association scheme. Recently, the bounds of Delsarte, Goethals, and Seidel for spherical codes and spherical designs were extended to the real Grassmannian spaces by Bachoc and others. In this talk, motivated by applications in quantum state tomography, we develop similar bounds for the complex Grassmannian spaces. We also consider Delsarte-type bounds for unitary designs. (Received August 07, 2007)