

**Meeting:** 1003, Atlanta, Georgia, SS 5A, AMS Special Session on Radon Transform and Inverse Problems, I

1003-44-808      **Fulton B Gonzalez\*** ([fulton.gonzalez@tufts.edu](mailto:fulton.gonzalez@tufts.edu)), Department of Mathematics, Tufts University, Medford, MA 02155. *Support Theorems for Radon Transforms on Affine Grassmannians.*

Let  $\mathcal{R}^{(p,q)}$  denote the Radon transform from functions on the manifold  $G(p, n)$  of affine  $p$ -planes in  $\mathbb{R}^n$  to functions on the manifold  $G(q, n)$  of affine  $q$ -planes on  $\mathbb{R}^n$ , with respect to the inclusion incidence relation. The range of this transform is characterized by Pfaffian-type differential equations when  $\dim G(p, n) < \dim G(q, n)$  and by moment conditions when  $\dim G(p, n) = \dim G(q, n)$  and  $p < q$ . We will show how a support theorem for  $\mathcal{R}^{(p,q)}$  follows from the moment conditions. We will also consider analogous range conditions for Radon transforms on matrix planes. (Received September 29, 2004)