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**Taryn C Flock\*** (taryn.flock@berkeley.edu). *Uniqueness of extremizers for an endpoint inequality of the  $k$ -plane transform.*

The Radon transform is an integral transform with applications in mathematics, tomography, and medicine. We discuss the Radon transform, the X-ray transform and their generalization: the  $k$ -plane transform. When  $k = n - 1$ , the  $k$ -plane transform coincides with the Radon transform; when  $k = 1$ , the X-ray transform.

The  $k$ -plane transform is a bounded operator from  $L^p(\mathbb{R}^n)$  to  $L^q$  of the Grassmann manifold of all affine  $k$ -planes in  $\mathbb{R}^n$  for certain exponents  $p$  and  $q$  that depend on  $k$  and  $n$ . In the endpoint case  $q = n + 1$ , we identify all extremizers of the associated inequality for the general  $k$ -plane transform. (Received August 25, 2013)