1014-52-1230 **Ralph Howard*** (howard@math.sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208, and **Daniel Hug** (daniel.hug@math.uni-freiburg.de), Mathematisches Institut, Universität Freiburg, Freiburg, Germany. *Convex Bodies with Constant Projection Functions.*

Let $G_k(\mathbf{R}^n)$ be the Grassmannian of all k-dimensional subspaces of $\mathbf{R}^n$. If K is a convex body in $\mathbf{R}^n$, then the ***k-projection function*** of K is the function that maps $U \in G_k(\mathbf{R}^n)$ to the k dimensional volume of the orthogonal projection, $K|U$, of K onto U. When this function is constant K is said to have ***constant k-brightness***. Constant 1-brightness is the familiar case of constant width.

Theorem. *If $n \geq 5$ and the convex body K in $\mathbf{R}^n$ has constant width and constant 3-brightness, then K is a Euclidean ball.*

The main point is that no regularity assumptions are being made about K. (Received September 27, 2005)