1117-52-167 **Sergii Myroshnychenko*** (`smyroshn@kent.edu`). *On the equation related to projections of convex bodies.*

Let S^2 be the unit sphere in $\mathbb{R}^3$. We consider the following question. Let f and g be two continuous functions on S^2 such that for any unit vector $\xi \in S^2$ their restrictions onto any great circle $\xi^\perp \cap S^2$ satisfy $f(\varphi_\xi(u)) + a(\xi) \cdot u = g(u)$ for all $u \in \xi^\perp \cap S^2$, where the vector $a(\xi)$ is in $\xi^\perp$ and φ_ξ is a rotation in $\xi^\perp$. Does it follow that $g(u) = f(u) + b \cdot u$ or $g(u) = f(-u) + b \cdot u$ for all $u \in S^2$ and some vector $b \in \mathbb{R}^3$?

Using a geometrical approach suggested by V.P.Golubyatnikov, we show that the answer is affirmative, provided f and g satisfy a certain smoothness condition and the map $\varphi : S^2 \to SO(3), \varphi(\xi) = \varphi_\xi$ is continuous. In this case, f and g can be thought of as support functions of hedgehogs in $\mathbb{R}^3$. (Received January 12, 2016)