

1120-52-168

Dmitry Ryabogin, Vladyslav Yaskin* (yaskin@ualberta.ca) and **Ning Zhang**. *Unique determination of convex lattice sets.*

Let K and L be origin-symmetric convex lattice sets in \mathbb{Z}^n . We study a discrete analogue of the Aleksandrov theorem for the surface areas of projections. If for every $u \in \mathbb{Z}^n$, the sets $(K|u^\perp) \cap \partial(\text{conv}(K)|u^\perp)$ and $(L|u^\perp) \cap \partial(\text{conv}(L)|u^\perp)$ have the same number of points, is then necessarily $K = L$? We give a positive answer to this question in \mathbb{Z}^3 . In higher dimensions, we obtain an analogous result when $\text{conv}(K)$ and $\text{conv}(L)$ are zonotopes. (Received February 21, 2016)