

1156-52-262

Alexey Balitskiy* (balitski@mit.edu). *Subadditivity of the projection inradii for convex coverings*. Preliminary report.

If a convex body in \mathbb{R}^n is covered by the union of convex bodies, multiple subadditivity questions can be asked. The subadditivity of the width is the subject of the celebrated plank theorem of T. Bang, whereas the subadditivity of the inradius is due to V. Kadets. We adapt the existing proofs of these results to prove a theorem on coverings by certain generalized non-convex “planks”. A corollary of this theorem establishes the subadditivity of the following quantity: the minimal inradius over all k -dimensional orthogonal projections onto subspaces of \mathbb{R}^n . This corollary interpolates between Bang’s theorem ($k = 1$) and Kadets’s theorem ($k = n$). (Received January 26, 2020)