

ASYMPTOTICS FOR THE MINIMUM RIESZ ENERGY AND BEST-PACKING ON SETS OF FINITE PACKING PREMEASURE

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Abstract: We show that for every compact set $A \subset \mathbb{R}^m$ of finite α -dimensional packing premeasure $0 < \alpha \leq m$, the lower limit of the normalized discrete minimum Riesz s -energy ($s > \alpha$) coincides with the outer measure of A constructed from this limit by method I. The asymptotic behavior of the discrete minimum energy on compact subsets of a self-similar set K satisfying the open set condition is also studied for s greater than the Hausdorff dimension of K . In addition, similar problems are studied for the best-packing radius.

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Key words: minimum Riesz energy, best-packing, ϵ -complexity, packing measure and premeasure, self-similar set, method I.