

**Jiří Janáček**

*Variance of periodic measure of bounded set with random position*

Comment.Math.Univ.Carolin. 47,3 (2006) 443-455.

**Abstract:** The principal term in the asymptotic expansion of the variance of the periodic measure of a ball in  $\mathbb{R}^d$  under uniform random shift is proportional to the  $(d + 1)$ st power of the grid scaling factor. This result remains valid for a bounded set in  $\mathbb{R}^d$  with sufficiently smooth isotropic covariogram under a uniform random shift and an isotropic rotation, and the asymptotic term is proportional also to the  $(d - 1)$ -dimensional measure of the object boundary. The related coefficients are calculated for various periodic grids constructed from affine sets.

**Keywords:** periodic measure, variance

**AMS Subject Classification:** 62J10, 62D05