

Hlubinka, Daniel**Stereology of extremes; size of spheroids.** (English) Zbl 1053.60053

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Summary: The prediction of size extremes in Wicksell's corpuscle problem with oblate spheroids is considered. Three-dimensional particles are represented by their planar sections (profiles) and the problem is to predict their extremal size under the assumption of a constant shape factor. The stability of the domain of attraction of the size extremes is proved under the tail equivalence condition. A simple procedure is proposed of evaluating the normalizing constants from the tail behaviour of appropriate distribution functions and its results are employed for the estimation of the spheroid size. Examples covering families of Gamma, Pareto and Weibull distributions are provided. A short discussion of maximum likelihood estimators of the normalizing constants is also included.

MSC:**60G70** Extreme value theory; extremal stochastic processes**62G32** Statistics of extreme values; tail inference**62P30** Applications of statistics in engineering and industry; control chartsCited in 4 Documents**Keywords:**

sample extremes; domain of attraction; normalizing constants; FGM system of distributions

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