

LIKELIHOOD ANALYSIS OF SPATIAL INHOMOGENEITY FOR MARKED POINT PATTERNS

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Abstract. An objective method is developed for estimations of both spatial intensity of the point locations and spatial variation of a characteristic parameter of the distributions for the attached marks. Its utility is demonstrated by means of analyses of seismological and ecological data sets.

Key words and phrases: Marked point patterns, intensity, distributions of marks, *B*-splines, smoothing, penalized likelihood, objective Bayesian method, magnitude frequency, *b*-value.