Ann Inst Stat Math (2012) 64:991–1007
DOI 10.1007/s10463-011-0344-7

Some problems in nonparametric inference for the stress release process related to the local time

Takayuki Fujii · **Yoichi Nishiyama**

Received: 5 November 2010 / Revised: 31 May 2011 / Published online: 11 November 2011

Abstract This paper is concerned with nonparametric statistics for the stress release process. We propose the local time estimator (LTE) for the stationary density and show that it is unbiased and uniformly consistent. The LTE is used in constructing an estimator for the intensity function. A goodness of fit test for the intensity function is also presented. In these studies, the local time of the stress release process plays an important role.

Keywords Stress release process · Local time · Stationary density · Uniform consistency · Goodness of fit test