
GAIL IVANOFF, University of Ottawa, 585 King Edward, Ottawa, ON, K1N 6N5

Optimal detection of a change-set in a spatial Poisson process

We generalize the classic change-point problem to a “change-set” framework: a spatial Poisson process changes its intensity on an unobservable random set. Optimal detection of the set is defined by maximizing the expected value of a gain function. In the case that the unknown change-set is defined by a locally finite set of incomparable points, we present a sufficient condition for optimal detection of the set using multiparameter martingale techniques. Two examples are discussed.