

Set estimation from reflected Brownian motion

R. Fraiman ¹

¹ U. de la Republica

Resumo/Abstract:

We study the problem of estimating a compact set $S \subset R^d$ from a trajectory of a reflected Brownian motion in S with reflections on the boundary of S . We establish consistency and rates of convergence for various estimators of S and its boundary. This problem has relevant applications in ecology in estimating the home range of an animal based on tracking data. We also consider the case of a reflected Brownian motion with drift.