

# Set estimation from reflected Brownian motion

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## **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.