

Fernique, X.

Fonctions aléatoires à valeurs dans les espaces lusiniens. (Random functions with values in Lusin spaces). (French) [Zbl 0721.60039](#)
Expo. Math. 8, No. 4, 289-364 (1990).

These excerpts from the “Abstract” of the paper being reviewed summarize it adequately: “We intend to show how the various techniques developed in the study of classical real processes indexed by a subset of the real line may be adapted and extended, under appropriate compactness assumptions, to the study of processes indexed by arbitrary metric spaces and taking their values in regular Lusin spaces. As we will see, the study of these abstract random functions often reduces to the corresponding one for real random functions... Several examples of these random functions are studied in the last chapters; in particular, Gaussian stationary or with stationary increments random functions and Ornstein-Uhlenbeck random functions. These examples point out the importance of the compactness properties. They also demonstrate, in particular in fluctuation problems, the efficiency of the integration techniques to obtain more precise and more general results than the classical ones.”

One should add that the paper provides all the insights, shortcuts, simplifications and examples which are the trademark of its author.

Reviewer: [A.F.Gualtierotti \(Lausanne\)](#)

MSC:

- [60G07](#) General theory of stochastic processes
- [60B05](#) Probability measures on topological spaces
- [60G17](#) Sample path properties
- [60G15](#) Gaussian processes

Cited in **7** Documents

Keywords:

[compactness assumptions](#); [regular Lusin spaces](#); [stationary increments random functions](#); [Ornstein-Uhlenbeck random functions](#); [fluctuation problems](#)