A NOTE ON IMPORTANCE SAMPLING SIMULATION FOR A
GERM-GRAIN MODEL

Zbigniew Palmowski

Abstract: In this paper we demonstrate how to use the importance sampling method
to simulate rare events in a germ-grain model. We analyze conditions under which two
germ-grain models are mutually absolutely continuous. We also find the likelihood
set process. We apply these results in simulating the probability that the radius of the
occupied component of the origin in continuous percolation is greater than some $R$.
This method is based on the reduction of the variance of estimator.

2000 AMS Mathematics Subject Classification: Primary 60D05, 62M05; Sec-
ondary 60K35, 82B43, 62M30.

Key words and phrases: Germ-grain model, Poisson process, change of measure,
likelihood process, stopping set.

THE FULL TEXT IS AVAILABLE HERE