

Exploiting the Waiting Time Paradox: Applications of the Renewal Length Transformation

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Abstract

We consider the transformation which take a distribution F into the distribution, $T(F)$, of the length of an interval covering a fixed point, for the stationary renewal process corresponding to F . The fact that $T(F)$ tends to be larger than F is the source of the famous “waiting time paradox”. Properties of the transformation, T , are derived as well as applications to several areas of probability and statistics.