

INTERSECTIONS AND SHIFT FUNCTIONS OF STRONG MARKOV
RANDOM CLOSED SETS

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Abstract: If M and M_1 are independent subsets of the positive half-line, then the function $\chi(t) = P\{M \cap (M_1 + t) = \emptyset\}$ is said to be a *shift function* of M with respect to M_1 . In the paper both sets M and M_1 are supposed to be strong Markov (or regenerative). It is shown that the shift function is a harmonic function with respect to the kernel determined by the transition probabilities of the corresponding semi-linear forward recurrence processes. Conditions for the uniqueness of such a harmonic function with given boundary values are presented.

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