

The Statistical Analysis of Consecutive Survival Data under Serial Dependence

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Key words: Truncation, censorship, bivariate distribution function, serial dependence.

In the analysis of medical data one often encounters data which are observed sequentially over time. For example in AIDS studies, let X_1 denote the time of infection, X_2 the time when antibodies occur and X_3 the time when AIDS is diagnosed for the first time. Typically, the variables of interest are the lifetimes $U_1 = X_2 - X_1$ and $U_2 = X_3 - X_2$, which may be dependent. While in applications U_1 is often truncated from the right, U_2 may be censored due to time limitations. It is the aim of this paper to statistically analyze the joint distribution of the pair $(U_1; U_2)$.