# A LIMIT THEOREM FOR TESTING WITH RANDOMLY CENSORED DATA

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## 1.  Introduction

Let $X_1,\ldots,X_n$ be independent identically distributed random variables (r.v.'s) and $Y_1,\ldots,Y_n$ be independent r.v.'s., independent of $X_1,\ldots,X_n$. Let

$$F(x) = P(X_i > x), \ x \geq 0$$

$$G_i(y) = P(Y_i > y), \ y \geq 0, \ 1 \leq i \leq n \ .$$

Let

$$\delta_i = [X_i < Y_i], \ Z_i = \min(X_i, Y_i), \ 1 \leq i \leq n \ .$$

Here, $[A]$ denotes indicator of event A.  The $X_i$'s are true survival times, the $Y_i$'s are censoring times and one observes $\{(\delta_i, Z_i), \ 1 \leq i \leq n\}$.  This is the so-called random censoring model where often one is interested in making inferences about F or about some function of F based on $\{(\delta_i, Z_i), \ 1 \leq i \leq n\}$.  In order to describe the specific problems to be considered here we need the following definitions.  In all of these definitions $F(0) = 1$.