

## 1. Nonparametric Estimation of the Bivariate Survival Function under Independent Censoring

It is desirable to have a non-parametric estimate of a multivariate survival distribution because it could serve as a baseline for evaluating the fit of more specific models, among other possible uses. Multivariate survival analysis is briefly discussed by a handful of books, and most of the results are available in journal papers. Hougaard (2000) presents many of these results and is a good starting point for the study of this topic. This series of talks presents an introduction to univariate and multivariate survival analysis, with emphasis on the nonparametric bivariate estimation, a problem yet to be solved under certain censoring schemes. Therefore, I will introduce some of the partial solutions, showing their properties and drawbacks. At the end, a solution based on the Dabrowska estimator will be given. This solution, is a proper bivariate survival function, i.e. it assigns nonnegative mass to any bounded rectangle in the plane, and is monotone decreasing on each coordinate.