MAP ∞ PDMA

Seminar 2021/2022

Determining groups in multiple survival curves

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Survival analysis includes a wide variety of methods for analyzing time-to-event data. One basic but important goal in survival analysis is the comparison of survival curves between groups. Several nonparametric methods have been proposed in the literature to test for the equality of survival curves for censored data. When the null hypothesis of equality of curves is rejected, leading to the clear conclusion that at least one curve is different, it can be interesting to ascertain whether curves can be grouped or if all these curves are different from each other. A method is proposed that allows determining groups with an automatic selection of their number. The applicability of the proposed method is illustrated using real data. We will discuss the possibility of extending the proposed methods to determine groups is other curves such as the cumulative hazard curves in competing risks model.

References

[1] N.M. Villanueva, M. Sestelo, L. Meira-Machado, A method for determining groups in multiple survival curves, *Statistics in Medicine*, 38(5), 866–877, 2019.

[2] L. Meira-Machado, M. Sestelo, Estimation in the progressive illness-death model: A nonexhaustive review, *Biometrical Journal* 61(2), 245–263, 2019.

[3] N.M. Villanueva, M. Sestelo, L. Meira-Machado, J. Roca-Pardiñas, clustcurv: An R Package for Determining Groups in Multiple Curves, *The R Journal*, 13, 2073–4859, 2021.