2021년 제 9회 통계세미나

고려대학교 통계연구소와 BK21 통계학교육연구팀이 다음과 같이
공동으로 세미나를 개최하오니 많은 참여 바랍니다.

일시 : 2021년 9월 24일 (금) 오전 10시
장소 : 온라인(ZOOM)으로 진행
연사 : 최태화 (최상범 교수 연구실 소속)

Rank-based regression analysis with interval-censored data

<Abstract>

We propose the rank-based inference procedures for the semiparametric accelerated failure time model with interval-censored data. This type of data commonly occurs in biomedical longitudinal studies, when periodic examination is inevitable but the event-of-interest is initially asymptomatic. The estimating equation is simply constructed by investigating whether the pair of observed error terms is comparable, and this equation can be generalized by adopting data-dependent weights. For statistical inference, an efficient resampling procedure is considered, which is much faster than classical bootstrap. Asymptotic properties of the proposed estimators are well established with the empirical processes. Furthermore, we develop the one-step efficient estimation by allowing semiparametrically efficient weight, which depends on unknown distribution function. To this end, the EM-based nonparametric maximum likelihood estimation is also considered. The proposed methods show remarkable performance in finite sample studies, and practical usage is illustrated with HIV/AIDS cohort study.

Key words: Accelerated lifetime; Gehan statistic; Interval censoring; One-step estimation; Rank regression; Survival analysis.

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