

Public Thesis Defense of Hortense DOMS - LIDAM

SST

3 April 2026, modifié le 24 March 2026

Joint Modeling of Complex Longitudinal Outcomes and Time-to-Event Data : With a Focus on Quality of Life Outcomes in Cancer Clinical Trials by Hortense DOMS

Vendredi 3 avril 2026 à 15h00 - Auditoire MORE51 - Place Montesquieu, 2 - 1348 Louvain-la-Neuve

In clinical trials, longitudinal measurements and time-to-event outcomes are repeatedly collected to assess treatment efficacy and disease progression. Joint models provide a natural framework to analyse these data

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latent variable models to capture the underlying structure of HRQoL outcomes and to better represent patients' quality of life over time. In particular, we develop a joint modelling framework for the analysis of multiple longitudinal ordinal outcomes in the presence of informative and competing dropouts. The proposed model links a latent variable underlying HRQoL responses to cause-specific dropout hazards. Special attention is given to the role of dropout by explicitly incorporating information on dropout mechanisms into the longitudinal process, allowing for a more accurate assessment of the underlying latent HRQoL dimension. To accommodate more complex longitudinal models, we also investigate two-stage approaches as a computationally efficient alternative to full joint estimation. A bias-corrected strategy is proposed and applied to multidimensional latent trait joint models, enabling the joint analysis of multiple HRQoL domains while retaining substantial computational advantages. In parallel, the thesis explores more flexible specifications of the survival submodel to relax common assumptions and improve practical applicability. The methods are motivated and illustrated using data from clinical trials in patients with glioblastoma.

Jury members :

Prof. Catherine Legrand (UCLouvain) (Supervisor)
Prof. Philippe Lambert (ULiège & UCLouvain) (Supervisor)
Prof. Anouar El Gouch (UCLouvain) (Chairperson)
Prof. Karim Barigou (UCLouvain) (Secretary)
Dr. Murielle Mauer (EORTC)
Dr. Virginie Rondeau (INSERM)

Pay attention : the public defense of Hortense DOMS will also take place in the form of a [videoconference](#)

