

Some steps forward towards understanding generalised linear mixed models

A seminar by Luca Maestrini

The Australian National University

Wednesday 08 Jul 2026 | 14:30-15:30

Room BENVENUTI

Department of Statistical Sciences

Generalised linear mixed models have become a mainstream statistical tool, but many of their properties have yet to be fully understood. The first part of this talk will review various attempts proposed over the past four decades to extend restricted maximum likelihood estimation to generalised linear mixed models. This estimation method is widely accepted and frequently used for fitting linear mixed models, with its principal advantage being that it produces less biased estimates of variance components. However, the concept of restricted maximum likelihood does not immediately generalise to settings with non-normally distributed responses, and it is not always clear to what extent its generalisations reduce the bias of variance component estimates, either asymptotically or in finite samples.

The second part of the talk will discuss second-order asymptotic theory for the parameters that are asymptotically more difficult to estimate in independent-cluster generalised linear mixed models. Consequences of the proposed theory include improved accuracy of statistical inference, as well as advances in optimal design and sample size calculations.



UNIVERSITÀ DI PADOVA
Dipartimento
di Scienze statistiche

