

# BAYESIAN METHODS

## Lab notes

### Lab 4 HIERARCHICAL PRIORS FOR POOLING STRENGTH: A META-ANALYSIS STUDY

**Example** Combining results from separate clinical trials

**Reference** *Gelman's* book: pag. 148 , Sec. 5.6 Hierarchical modelling applied to a meta-analysis

**Language** R code: *N-N.r* BUGS code: *N-N.b*

**Subject** *Results of 22 clinical trials of beta-blockers for reducing mortality after myocardial infarction are provided.*

*Regarding the 22 studies as exchangeable, analyse the data in order to estimate: the overall 'average' effect of the beta-blockers treatment; the effect size in any of the 22 observed studies; the effect size in another, comparable (exchangeable) unobserved study.*

*Compare a meta-analysis to simpler methods: the separate analysis, assuming there is no similarity between studies; the complete pooling, assuming the studies to be identical replications of each other.*

Programs in R/BUGS are written down in *N-N.r* and *N-N.b* (at the course web page).