

# fitAutoReg: Staging

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Staging...

The log-likelihood function of the random-effect multivariate meta-analysis is given by

$$\ell(\boldsymbol{\alpha}, \boldsymbol{\Psi}; \boldsymbol{\beta}_i) = -\frac{1}{2} \left\{ q \log(2\pi) + \log[\det(\boldsymbol{\Psi} + \boldsymbol{\Theta}_i)] + (\boldsymbol{\beta}_i - \boldsymbol{\alpha})' (\boldsymbol{\Psi} + \boldsymbol{\Theta}_i)^{-1} (\boldsymbol{\beta}_i - \boldsymbol{\alpha}) \right\} \quad (1)$$

where  $\boldsymbol{\beta}_i$  is the vector of parameter estimates for the  $i^{\text{th}}$  person,  $q$  is the length of  $\boldsymbol{\beta}_i$ ,  $\boldsymbol{\Theta}_i$  is the sampling variance-covariance matrix of  $\boldsymbol{\beta}_i$ ,  $\boldsymbol{\alpha}$  is the vector of means of the random-effect, and  $\boldsymbol{\Psi}$  is the variance-covariance matrix of the random-effect.

## References

R Core Team. (2023). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. <https://www.R-project.org/>