Jacobian Calculations for nls()

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Jacobians in nls()

`nls()` needs Jacobians calculated at the current set of trial nonlinear model parameters to set up the Gauss-Newton equations. Unfortunately, `nls()` calls the Jacobian the "gradient", and uses function `numericDerivs()` to compute them. ?? where is this called in the sequence??

Other tools for computing Jacobians

The package `numDeriv` includes a function `jacobian()` that acts on a user function `resid()` to produce the Jacobian at a set of parameters by several choices of approximation.

The package `nlsr` has a function `model2rjfun()` that converts an expression describing how the residual functions are computed into an R function that computes the residuals at a particular set of parameters and sets the **attribute** "gradient" of the vector of residual values to the Jacobian at the particular set of parameters.

Symbolic methods from `nlsr`

`numDeriv` package