```
> wle.lm.result.cv <- wle.lm(y.data~x.log.data
+     -1, boot=50, group=3, num.sol=3)
> summary(wle.lm.result.cv)

Call:
wle.lm(formula = y.data ~ x.log.data - 1,
       boot = 50, group = 3, num.sol = 3)


Root  1


Weighted Residuals:
    Min      1Q   Median      3Q      Max
-1.30476 -0.32233 -0.03861  0.32276  1.21646


Coefficients:
           Estimate Std. Error t value Pr(>|t|)
x.log.data 7.98484    0.01874   426.1   <2e-16 ***
---
Signif. codes: 0 '***' 0.001 '**' 0.01
                '*' 0.05 '.' 0.1 ' ' 1


Residual standard error: 0.5649 on 57.76524 degrees of freedom
Multiple R-Squared: 0.9997,
Adjusted R-squared: 0.9996
F-statistic: 1.815e+05 on 1 and 57.76524
degrees of freedom, p-value: 0
```

Figure 10: Fitting the model suggested by weighted cross-validation.

M. Markatou. A closer look at the weighted likelihood in the context of mixtures. In C. A. Charalambides, M. V. Koutras, and N. Balakrishnan, editors, *Probability and Statistical Models with Applications*, pages 447–467. Chapman and Hall/CRC, 2001. 33

M. Markatou, A. Basu, and B. G. Lindsay. Weighted likelihood estimating equations: The discrete case with applications to logistic regression. *Journal of Statistical Planning and Inference*, 57:215–232, 1997. 32

M. Markatou, A. Basu, and B. G. Lindsay. Weighted likelihood estimating equations with a bootstrap root search. *Journal of the American Statistical Association*, 93:740–750, 1998. 32, 34

J. Shao. Linear model selection by cross-validation. *Journal of the American Statistical Association*, 88: 486–494, 1993. 36

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# Changes on CRAN

*by Kurt Hornik and Friedrich Leisch*

## CRAN packages

The following extension packages from 'src/contrib' were added since the last newsletter.

**AnalyzeFMRI** Functions for I/O, visualisation and analysis of functional Magnetic Resonance Imaging (fMRI) datasets stored in the ANALYZE format. By J L Marchini.

**EMV** Estimation of missing values in a matrix by a *k*-th nearest neighbors algorithm. By Raphael Gottardo.

**Rwave** Rwave is a collection of R functions which provide an environment for the Time-Frequency analysis of 1-D signals (and especially for the wavelet and Gabor transforms of noisy signals). It is based on the book: 'Practical Time-Frequency Analysis: Gabor and Wavelet Transforms with an Implementation in S', by Rene Carmona, Wen L. Hwang and

Bruno Torresani, Academic Press (1998). S original by Rene Carmona, R port by Brandon Whitcher.

**car** Contains mostly functions for applied regression, linear models, and generalized linear models, with an emphasis on regression diagnostics, particularly graphical diagnostic methods. By John Fox.

**diamonds** Functions for illustrating aperture-4 diamond partitions in the plane, or on the surface of an octahedron or icosahedron, for use as analysis or sampling grids. By Denis White.

**fastICA** Implementation of FastICA algorithm to perform Independent Component Analysis (ICA) and Projection Pursuit. By J L Marchini and C Heaton.

**fields** A collection of programs for curve and function fitting with an emphasis on spatial data. The major methods implemented include cubic and thin plate splines, universal Kriging and Kriging for large data sets. The main feature is that any covariance function implemented in R can be used for spatial prediction. By Doug Nychka.

**pcurve** Fits a principal curve to a numeric multivariate dataset in arbitrary dimensions. Produces diagnostic plots. Also calculates Bray-Curtis and other distance matrices and performs multi-dimensional scaling and principal component analyses. S original by Trevor Hastie, S+ library by Glenn De'ath, R port by Chris Walsh.

**pixmap** Functions for import, export, plotting and other manipulations of bitmapped images. By Friedrich Leisch and Roger Bivand.

**rpvm** Provides interface to PVM APIs, and examples and documentation for its use. By Na (Michael) Li and A. J. Rossini.

**sem** Contains functions for fitting general linear structural equation models (with observed and unobserved variables) by the method of maximum likelihood using the RAM approach, and for fitting structural equations in observed-variable models by two-stage least squares. By John Fox.

**sptests** A collection of tests for spatial autocorrelation, including global Moran's I and Geary's C. By Roger Bivand.

**spweights** A collection of functions to create spatial weights matrix objects from polygon contiguities, from point patterns by distance and tesselations, for summarising these objects, and for

permitting their use in spatial data analysis. By Roger Bivand and Nicholas Lewin-Koh.

**vegan** Various help functions for community ecologists. By Jari Oksanen.

**waveslim** Basic wavelet routines for time series analysis, based on wavelet methodology developed in 'Wavelet Methods for Time Series Analysis', by D. B. Percival and A. T. Walden, Cambridge University Press (2000), along with 'An Introduction to Wavelets and Other Filtering Methods in Finance and Economics' by R. Gencay, F. Selcuk and B. Whitcher, Academic Press (2001). By Brandon Whitcher.

CRAN mirrors the R packages from the Omegahat project in directory 'src/contrib/Omegahat'. The following are recent additions:

**SASXML** Example for reading XML files in SAS 8.2 manner. By Duncan Temple Lang.

**Sxslt** An extension module for libxslt, the XML-XSL document translator, that allows XSL functions to be implemented via R functions.

## Checking packages

The current development version of R (the forthcoming 1.4.0) features a much more sophisticated test suite for checking packages with the `R CMD check` utility. Especially the checks for consistency between code and documentation are much better, and we have started to use these checks for all contributions to CRAN. Several contributors to CRAN already had the frustrating experience that their package passed `R CMD check` on their machine (running 1.3.1) without a warning, and we responded along the lines of *"thanks for your contribution to the R project, but perhaps you find some time to fix ..."*.

We want to keep the quality of R as high as possible, and with that we mean the whole community effort, not only the base system. R would not be what it is today without all those wonderful packages contributed to CRAN. As mentioned above, the new suite of checks will be released as part of R 1.4.0, in the meantime we would like to invite all package developers to download a CVS snapshot of the development version and run it from there.

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