

# Latticist Frogs demo

A demonstration of the **latticist** package

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# Introduction

The **latticist** package provides a graphical user interface for exploratory visualisation in R. It is primarily an interface to the **lattice** graphics system, but also produces displays from the **vcd** package for categorical data.

While **latticist** is normally used interactively (as a GUI), this document gives a sequence of the plots produced, where each step can be taken in the graphical user interface. Note that the displays can be customised by editing the calls used to generate them (see appendix for full code).

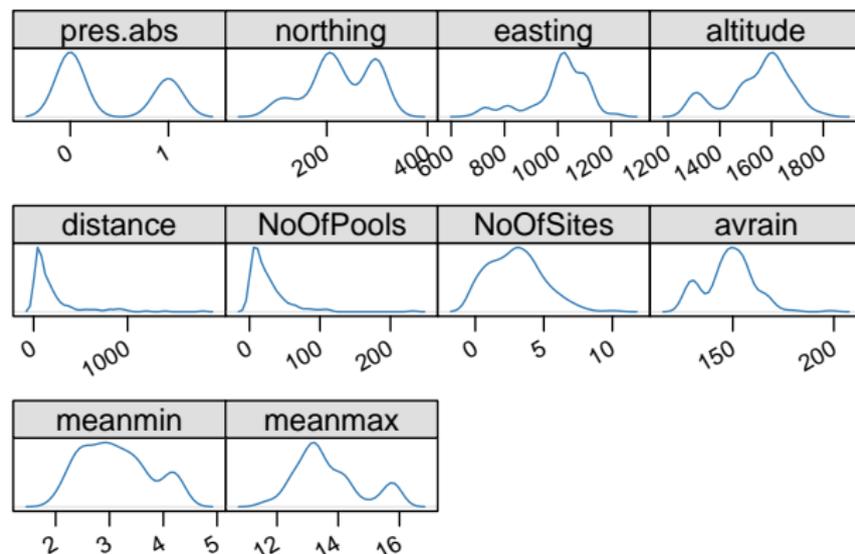
The dataset here is `frogs`, available in the **DAAG** package. The data are on the distribution of the Southern Corroboree frog, which occurs in the Snowy Mountains area of New South Wales, Australia. – *from ?frogs*

## Initial display

```
> spec <- list()
```

```
> latticist(frogs, spec = spec)
```

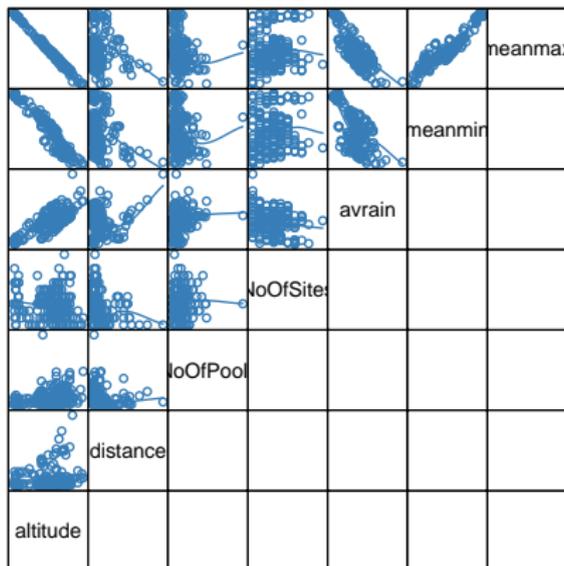
```
marginal.plot(frogs, data = frogs, sub .... → p. 11
```



## Scatterplot matrix with subset of variables

```
> spec <- list(varSubset = c("altitude", "distance",  
  "NoOfPools", "NoOfSites", "avrain", "meanmin",  
  "meanmax"), defaultPlot = "splom")
```

```
splom(~frogs[c("altitude", "distance", ... → p. 12
```



Scatter Plot Matrix

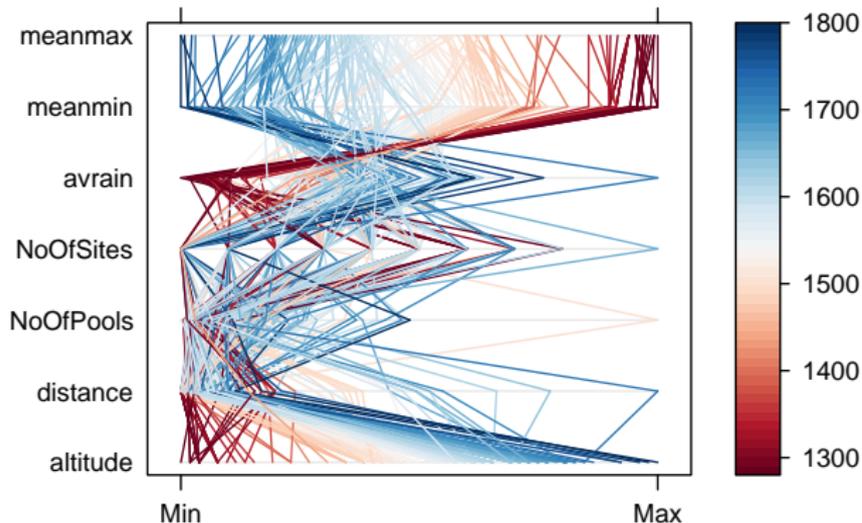
## Parallel plot with color (groups) variable

```
> spec$groups <- "altitude"
```

```
> spec$defaultPlot <- "parallel"
```

```
parallel(~frogs[c("altitude", "distance... → p. 13
```

**Parallel plot grouped by altitude**



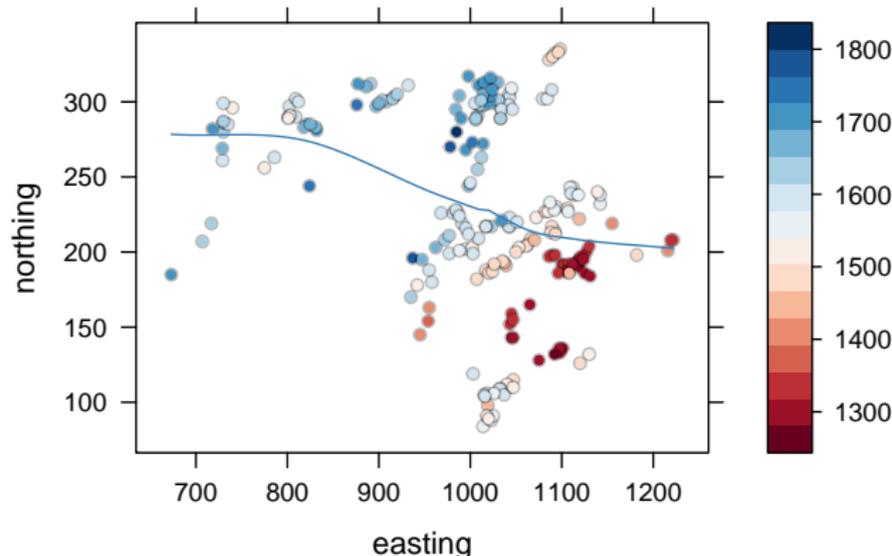
## Set x and y variables

```
> spec$yvar <- "northing"
```

```
> spec$xvar <- "easting"
```

```
levelplot(altitude ~ easting * northing.... → p. 14
```

**northing vs easting by altitude**

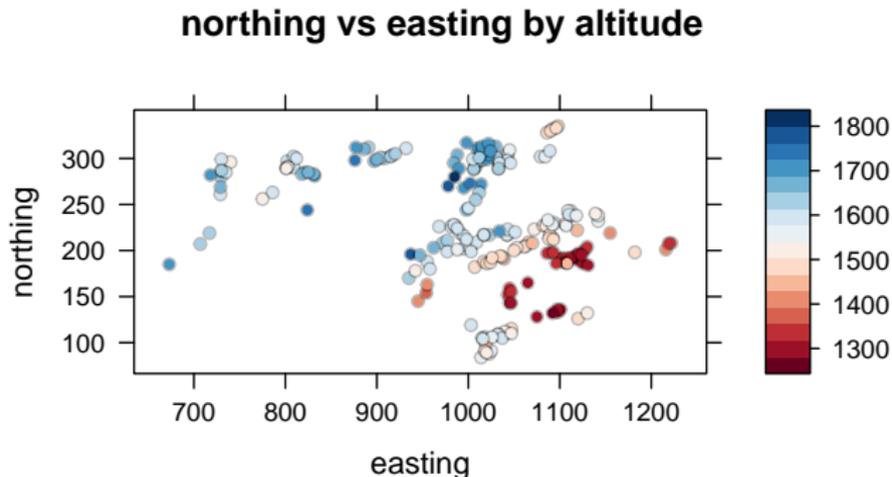


## Isometric scale, remove lines

```
> spec$aspect <- "iso"
```

```
> spec$doLines <- FALSE
```

```
levelplot(altitude ~ easting * northing.... → p. 15
```

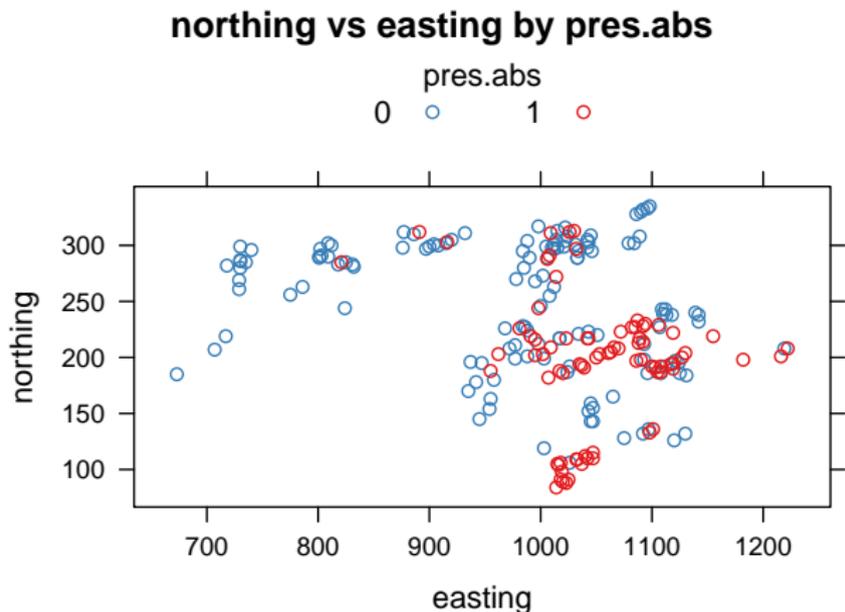


N = 212, 2008-11-14, R 2.8.0Patched

## Set grouping variable

```
> spec$groups <- "pres.abs"
```

```
xyplot(northing ~ easting, data = frogs.... → p. 16
```



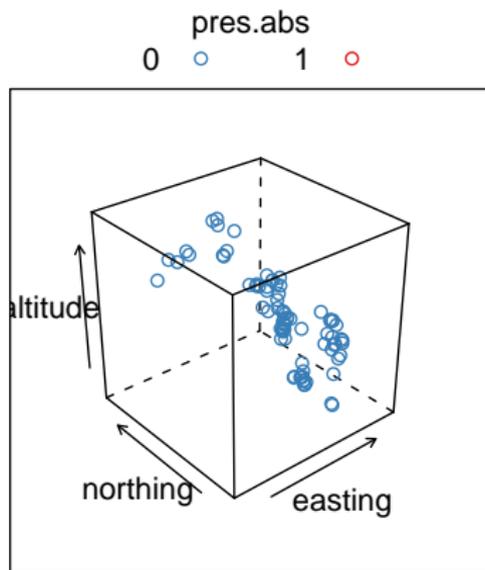
N = 212, 2008-11-14, R 2.8.0Patched

## Set z variable

```
> spec$zvar <- "altitude"
```

```
cloud(altitude ~ easting * northing, da.... → p. 17
```

### altitude vs easting and northing by pres.abs



N = 212, 2008-11-14, R 2.8.0Patched

## Details

The results in this document were obtained using R 2.8.0 with the packages **lattice** 0.9–42, **lattice** 0.17–15, and **latticeExtra** 0.5–5. R itself and all packages used are available from CRAN at <http://CRAN.R-project.org/>.

For an excellent introduction to and coverage of Lattice:

Sarkar, Deepayan (2008). *Lattice: Multivariate Data Visualization with R*, Springer. <http://lmdvr.r-forge.r-project.org/>

## Appendix: Code

Code to produce the plot on page 3:

```
marginal.plot(frogs, data = frogs, sub = list(
  "N = 212, 2008-11-14, R 2.8.0Patched",
  x = 0.99, just = "right", cex = 0.7,
  font = 1))
```

## Appendix: Code

Code to produce the plot on page 4:

```
splom(~frogs[c("altitude", "distance",  
"NoOfPools", "NoOfSites", "avrain",  
"meanmin", "meanmax")], data = frogs,  
  panel = function (...)  
  {  
    try(panel.xyplot(...))  
  }, type = c("p", "smooth"), lower.panel = expression,  
  varname.cex = 0.7, pscales = 0,  
  par.settings = simpleTheme(cex = 0.5),  
  sub = list("N = 212, 2008-11-14, R 2.8.0Patched",  
    x = 0.99, just = "right", cex = 0.7,  
    font = 1))
```

## Appendix: Code

Code to produce the plot on page 5:

```
parallel(~frogs[c("altitude", "distance",  
"NoOfPools", "NoOfSites", "avrain",  
"meanmin", "meanmax")], data = frogs,  
  groups = n.level.colors(altitude),  
  panel = function (... , col, groups,  
    subscripts)  
  {  
    col <- groups[subscripts]  
    panel.parallel(... , col = col,  
      subscripts = subscripts)  
  }, legend = simpleColorKey(with(frogs,  
  altitude)), main = "Parallel plot grouped by altitude",  
  par.settings = simpleTheme(), sub = list(  
    "N = 212, 2008-11-14, R 2.8.0Patched",  
    x = 0.99, just = "right", cex = 0.7,  
    font = 1))
```

## Appendix: Code

Code to produce the plot on page 6:

```
levelplot(altitude ~ easting * northing,  
  data = frogs, main = "northing vs easting by altitude",  
  xlab = "easting", ylab = "northing",  
  panel = panel.levelplot.points,  
  prepanel = try.prepanel.loess, jitter.x = TRUE,  
  type = c("p", "smooth"), plot.args = list(panel.error =  
  par.settings = simpleTheme(), sub = list(  
    "N = 212, 2008-11-14, R 2.8.0Patched",  
    x = 0.99, just = "right", cex = 0.7,  
    font = 1))
```

## Appendix: Code

Code to produce the plot on page 7:

```
levelplot(altitude ~ easting * northing,  
  data = frogs, main = "northing vs easting by altitude",  
  xlab = "easting", ylab = "northing",  
  panel = panel.levelplot.points,  
  prepanel = prepanel.default.xyplot,  
  aspect = "iso", par.settings = simpleTheme(),  
  sub = list("N = 212, 2008-11-14, R 2.8.0Patched",  
    x = 0.99, just = "right", cex = 0.7,  
    font = 1))
```

## Appendix: Code

Code to produce the plot on page 8:

```
xyplot(northing ~ easting, data = frogs,  
       groups = pres.abs, main = "northing vs easting by pres.  
       xlab = "easting", ylab = "northing",  
       aspect = "iso", par.settings = simpleTheme(),  
       auto.key = list(title = "pres.abs",  
                       cex.title = 1, columns = 2),  
       sub = list("N = 212, 2008-11-14, R 2.8.0Patched",  
                 x = 0.99, just = "right", cex = 0.7,  
                 font = 1))
```

## Appendix: Code

Code to produce the plot on page 9:

```
cloud(altitude ~ easting * northing,  
      data = frogs, groups = pres.abs,  
      main = "altitude vs easting and northing by pres.abs",  
      xlab = "easting", ylab = "northing",  
      par.settings = simpleTheme(), auto.key = list(  
        title = "pres.abs", cex.title = 1,  
        columns = 2), sub = list("N = 212, 2008-11-14, R 2.  
x = 0.99, just = \"right\", cex = 0.7,  
font = 1))
```