Lattice graphics and Subsets

Lattice graphics

\[
\text{plotname}(y \sim x \mid z, \text{data}=\text{dataname}, \text{groups}=w, \ldots)
\]

- **y** the variable plotted along the \( y \) axis
- **x** the variable plotted on the \( x \) axis
- **z** a conditioning variable used to split the plot up into multiple subplots called **panels**
- **w** a grouping variable used to display groups differently within the same panel
- **dataname** the name of the dataframe in which \( x, y, w, z \) live

**plotname** the name of the plotting function in the lattice package. Important plots are

- **histogram**
- **densityplot**
- **bwplot**
- **dotplot**
- **xyplot**

... all kinds of other optional arguments that control all kinds of things. For example you can use

- **main=** to set the title
- **xlab=** to label the \( x \)-axis
- **ylab=** to label the \( y \)-axis
- **auto.key=** to add a key for groups

```
densityplot(~height, Galton)
densityplot(~height | sex, Galton)
densityplot(~height, Galton, groups = sex, auto.key = T)
```

Subsetting data frames

The **subset()** function can be used together with logical conditions to pick out a subset of cases of a data frame (to make a new dataframe). Helpful symbols in conditions include:

- **==** is equal to
- **>, <, <=, >=** comparisons
- **&** and
- **|** or
- **!** not

**subset(datname,condition)** returns a dataframe that is the subset of cases of the original dataframe **datname** that satisfy the condition.

```
subset(Galton, sex == "M")
subset(Galton, height < 65)
subset(Galton, mother < 65 & father < 65)
subset(Galton, mother > 65 | father > 70)
```