

Solutions for chapter Two-Color Arrays

Exercise 1

There are 18 files with the extension `.gpr`. They contain the output of the image analysis, that is, the quantified red and green intensities for each feature on the arrays. The 18 files correspond to the 18 arrays. A description of what was hybridized to these arrays is in the file `samplesInfo.txt`.

Exercise 2

- a By subtracting the background estimate, many of the resulting values are negative, and the application of the logarithm leads to `NA` values. The scatterplot then also makes the imbalances between the red and the green color channels more apparent; this is seen in the more pronounced curved shape of the distribution.
- b `plotMA` plots each data point as a dot, whereas `smoothScatter` plots the density of the data points with a smooth false color map. In data-dense regions, the latter may be more informative. When the number of data points is large, `smoothScatter` also uses less time to display and the plot is more compact to store in the vector graphics file format produced by R's PDF device.