Even so, automatic methods for selecting the amount of smoothing are also useful. Selecting the amount of smoothing using subjective methods requires time and effort. When a large number of smooths are necessary, some automation is desirable. In other cases, the statistician will want to avoid the explicit appearance of subjectivity in the choice. Cross-validation (CV) is a popular general-purpose method. The criterion is:

$$CV(h) = \frac{1}{n} \sum_{j=1}^{n} (y_j - \hat{f}_{h(j)}(x_j))^2$$

where (j) indicates that point j is left out of the fit. We pick the h that minimizes this criterion.