5.5 Non-parametric alternatives

The data for this example are the same as for Example 5.3. The methods are the same too. For example, for each pair of sets of 10 values, derive the empirical cumulative distribution of the data, and hence the K-S statistic. Plotting up the distribution of this statistic will show that a shift in location between the two original datasets (the 0.5 unit suggested in Example 5.3) can more easily be detected for lower levels of contamination by outliers. This is as one would expect. If there is no shift (the underlying distributions are the same) then the K-S test is insensitive to outliers.

Similar conclusions apply to the Mann-Whitney test. Shape, rather than location, can be investigated by using the test data for the F-test.