



**Estimation of the number of clusters with SHIPS (Model M1).** Representation of the criterion used to determine the estimated number of clusters  $crit(k) = Gap(k) - Gap(\tilde{k}) + s_{\tilde{k}}$ . The estimated  $K$  is the smallest  $k$  such as  $crit(k) \geq 0$ .

The black line represents the criterion and the red line the 0 threshold.

The first replicate was used to produce this plot.