



Fig. 3.13: **Comparison between classification forests and boosting** on two examples. Forests produce a smooth, probabilistic output. High uncertainty is associated with regions between different classes or away from training data. boosting produces a hard output. Interpreting the output of a boosted strong classifier as real valued does not seem to produce intuitively meaningful confidence. The forest parameters are: $D = 2$, $T = 200$, and we use axis-aligned weak learners. Boosting was also run with 200 axis-aligned stumps and the remaining parameters optimized to achieve best results.

3.5.2 Comparison with support vector machines

Figure 3.14 illustrates a comparison between classification forests and conventional support vector machines⁵ on three different four-class training sets. In all examples the four classes are nicely separable

⁵SVM experiments are obtained via the publically available code in <http://asi.insa-rouen.fr/enseignants/arakotom/toolbox/index.html>. For multi-class experiments we run one-v-all SVM.