

Supplementary material for the paper:  
A robust and outlier-adaptive method for non-rigid  
point registration

July 8, 2012

Now we show one arbitrary illustration of 50 runs on the 4 test data sets for 10%,  
20%, 30% real outlier ratios:

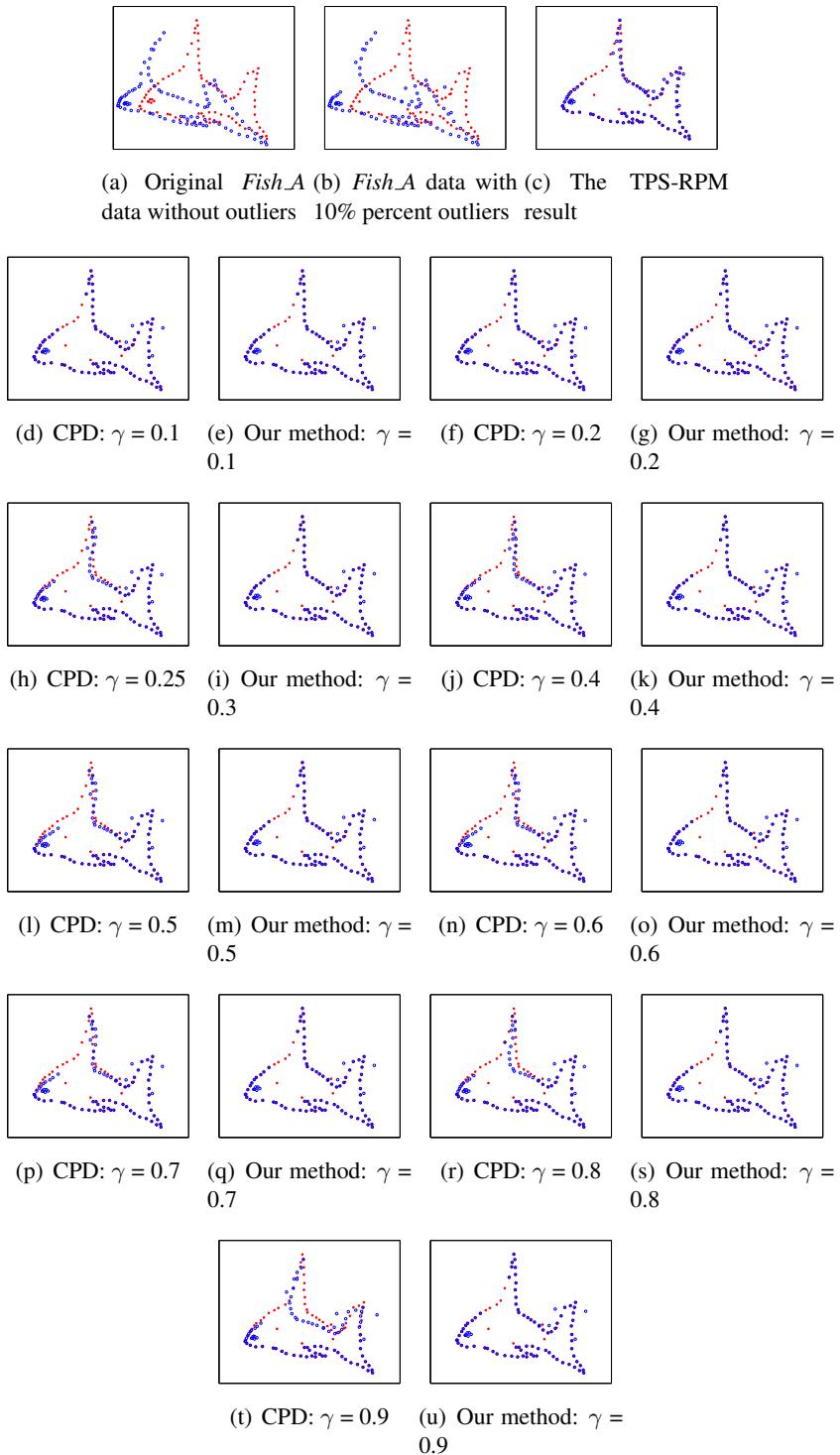


Figure 1: One of 100 runs on *Fish\_A* data, the real outlier ratio is 10%

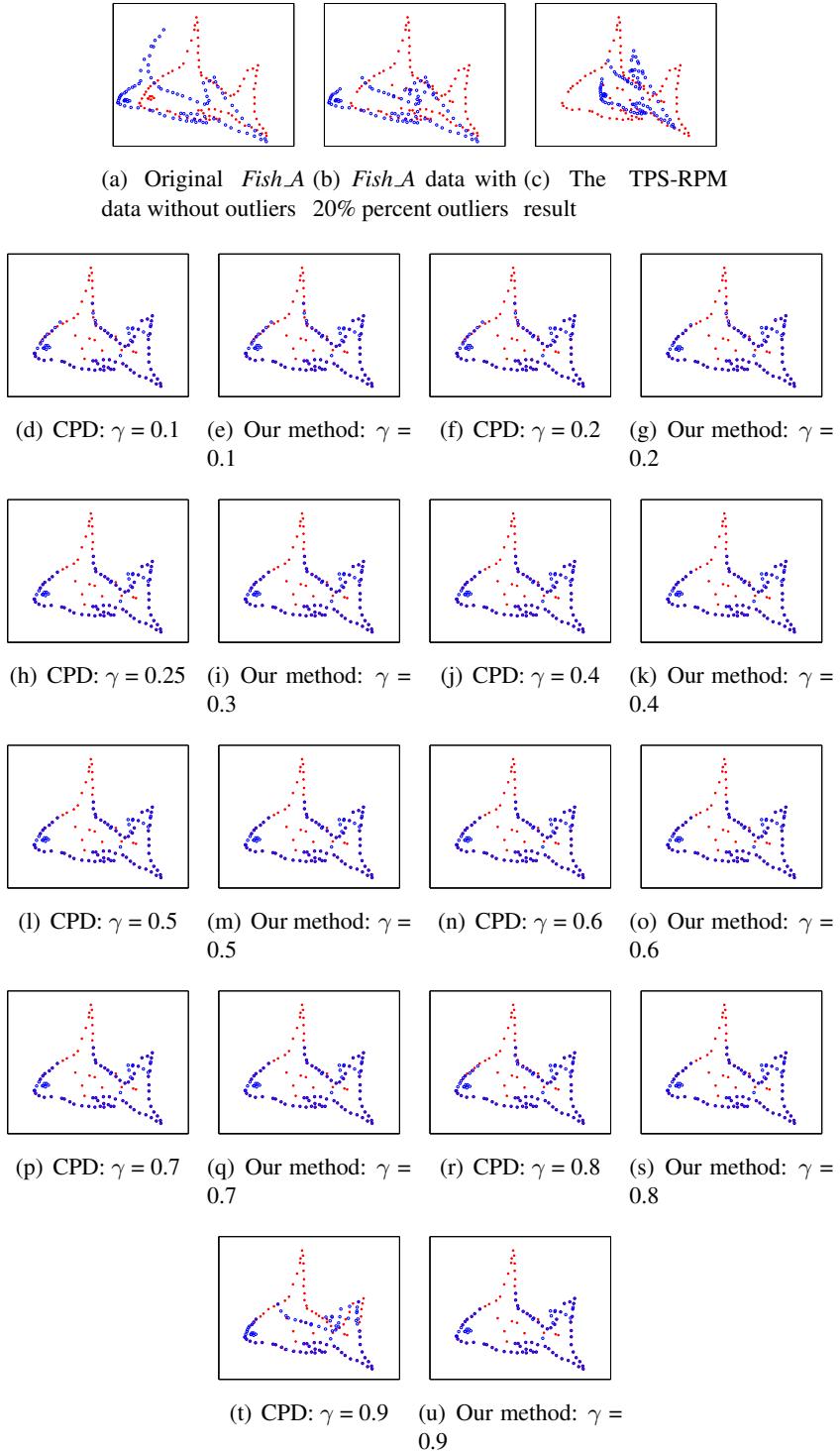


Figure 2: One of 100 runs on *Fish\_A* data, the real outlier ratio is 20%

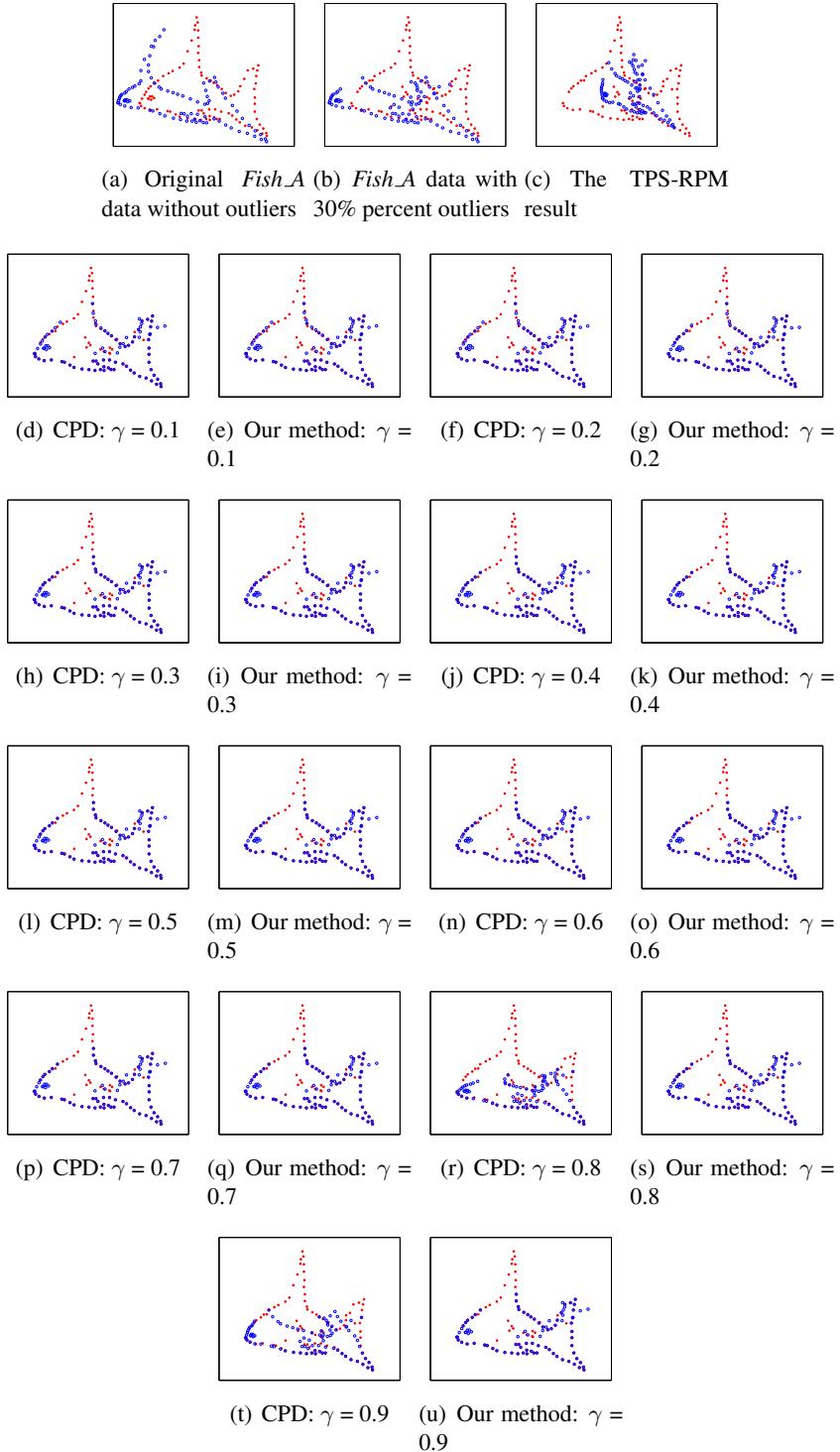


Figure 3: One of 100 runs on *Fish\_A* data, the real outlier ratio is 30%

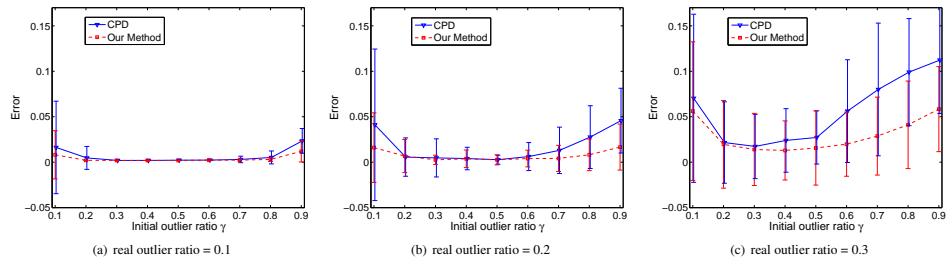


Figure 4: A comparison of CPD and our algorithm on *Fish\_A* data

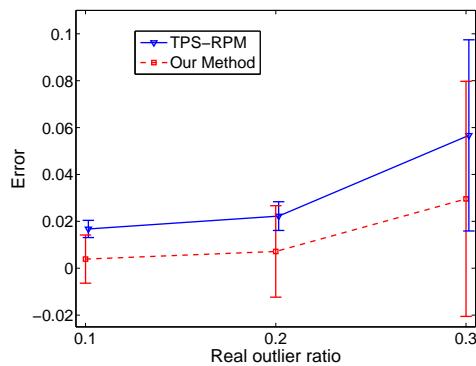


Figure 5: A comparison of TPS\_RPM and our algorithm on *Fish\_A* data

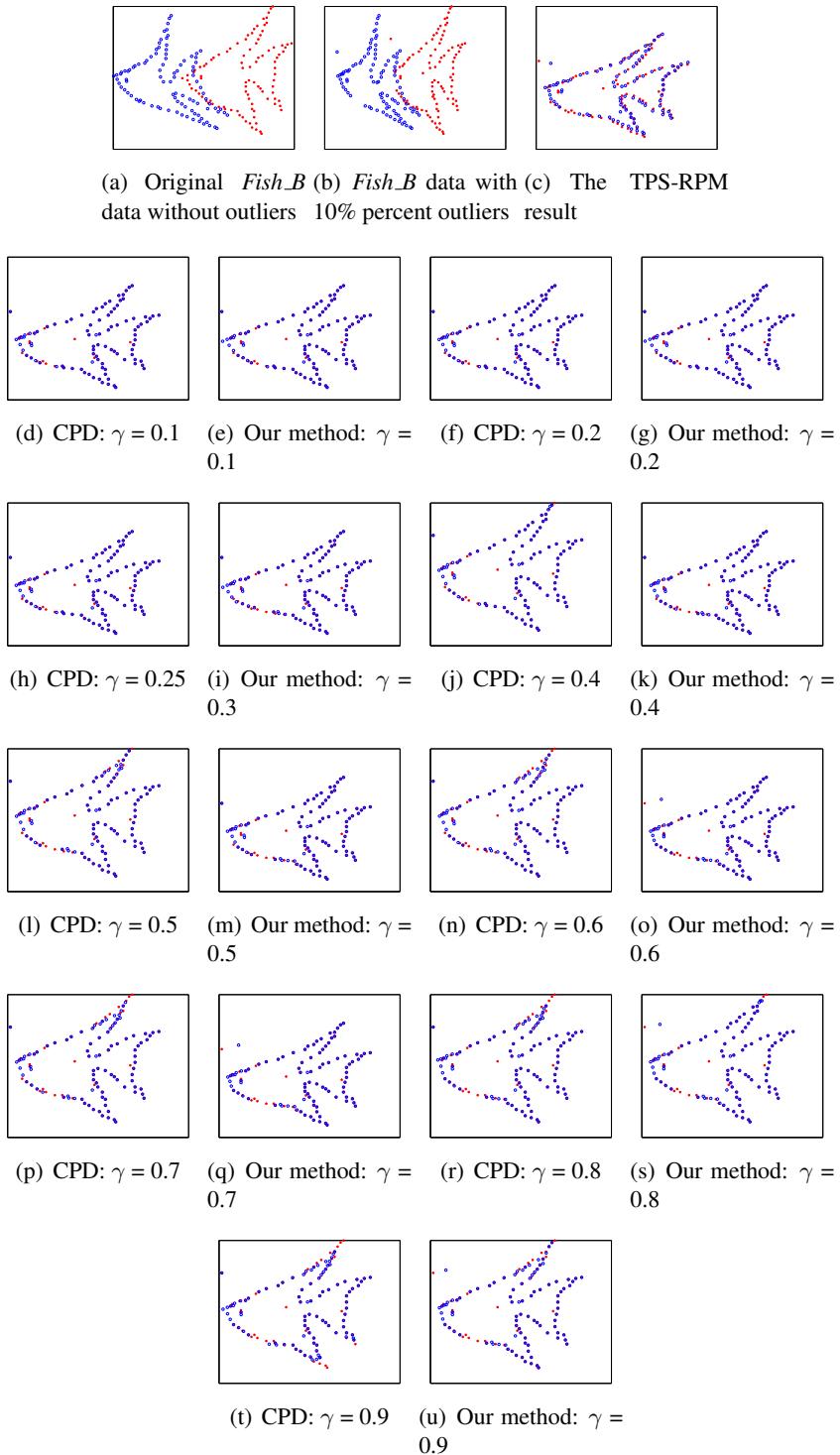


Figure 6: One of 100 runs on *Fish\_B* data, the real outlier ratio is 10%

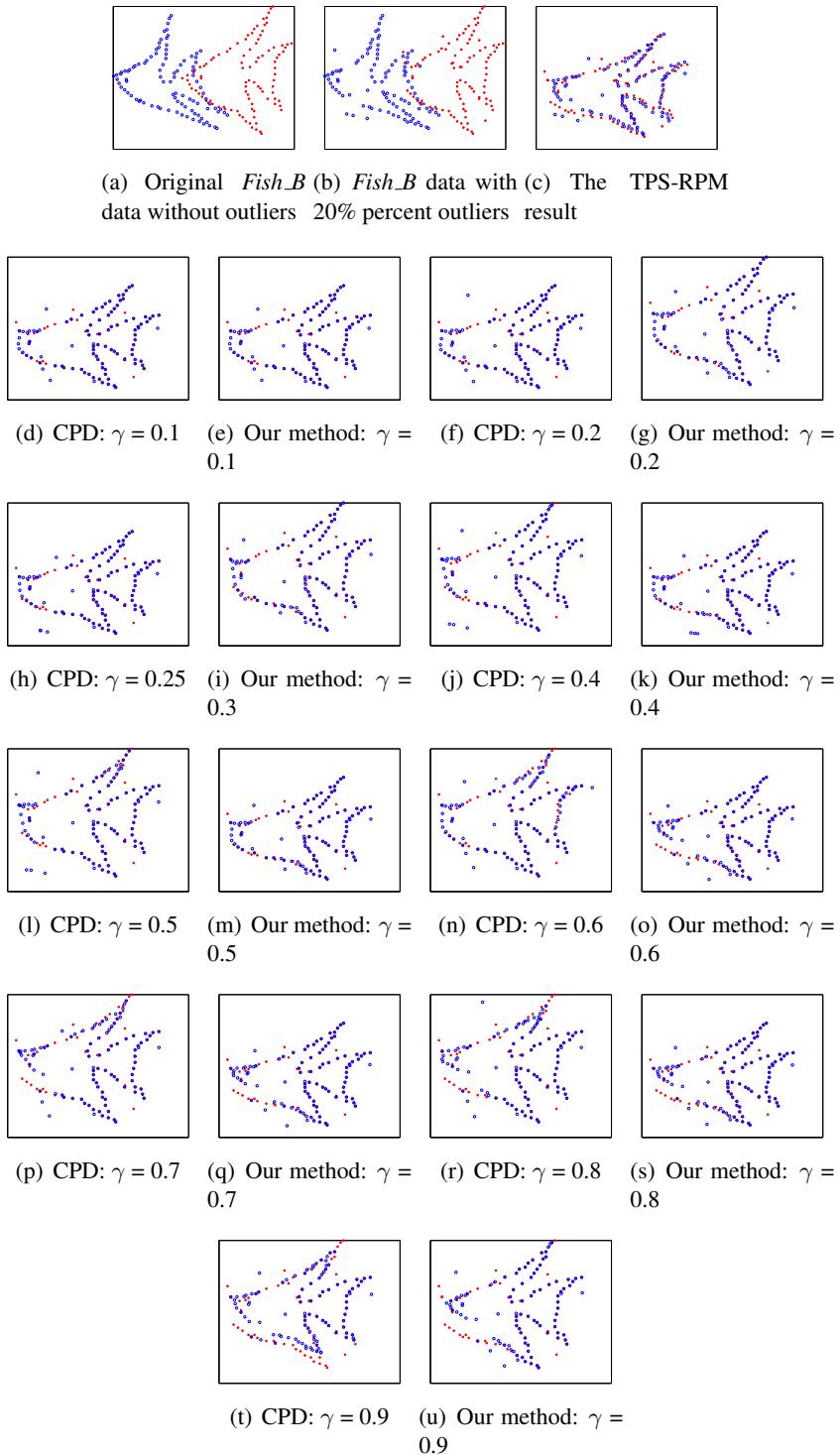
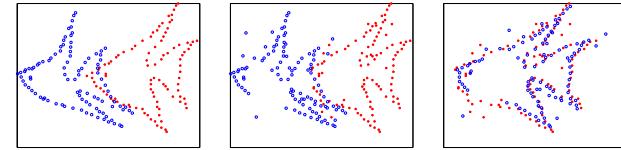
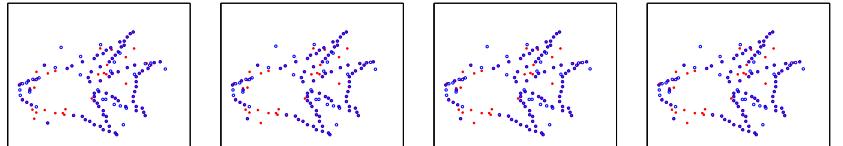


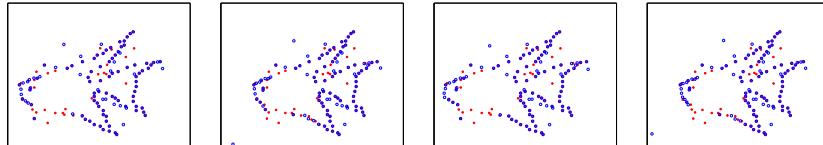
Figure 7: One of 100 runs on *Fish\_B* data, the real outlier ratio is 20%



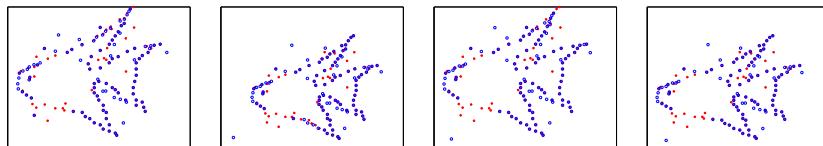
(a) Original *Fish\_B* (b) *Fish\_B* data with 30% percent outliers (c) The TPS-RPM result



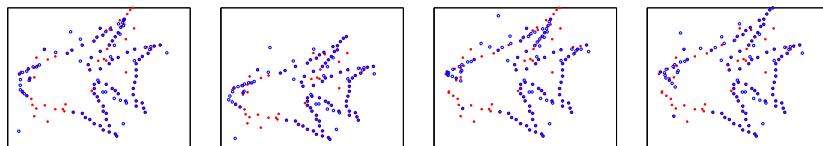
(d) CPD:  $\gamma = 0.1$  (e) Our method:  $\gamma = 0.1$  (f) CPD:  $\gamma = 0.2$  (g) Our method:  $\gamma = 0.2$



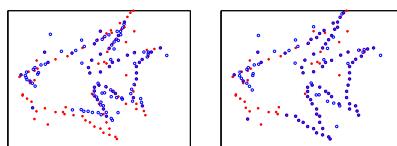
(h) CPD:  $\gamma = 0.3$  (i) Our method:  $\gamma = 0.3$  (j) CPD:  $\gamma = 0.4$  (k) Our method:  $\gamma = 0.4$



(l) CPD:  $\gamma = 0.5$  (m) Our method:  $\gamma = 0.5$  (n) CPD:  $\gamma = 0.6$  (o) Our method:  $\gamma = 0.6$



(p) CPD:  $\gamma = 0.7$  (q) Our method:  $\gamma = 0.7$  (r) CPD:  $\gamma = 0.8$  (s) Our method:  $\gamma = 0.8$



(t) CPD:  $\gamma = 0.9$  (u) Our method:  $\gamma = 0.9$

Figure 8: One of 100 runs on *Fish\_B* data, the real outlier ratio is 30%

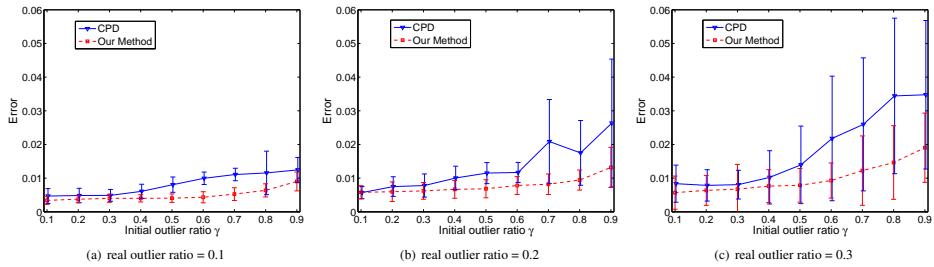


Figure 9: A comparison of CPD and our algorithm on *Fish\_B* data

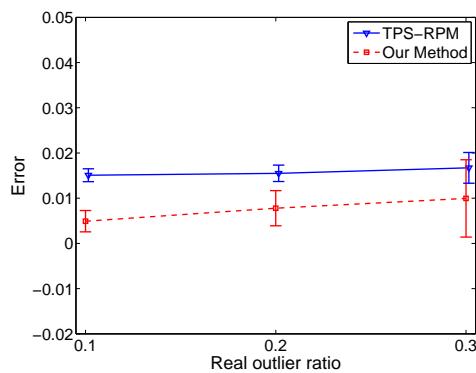


Figure 10: A comparison of TPS\_RPM and our algorithm on *Fish\_B* data

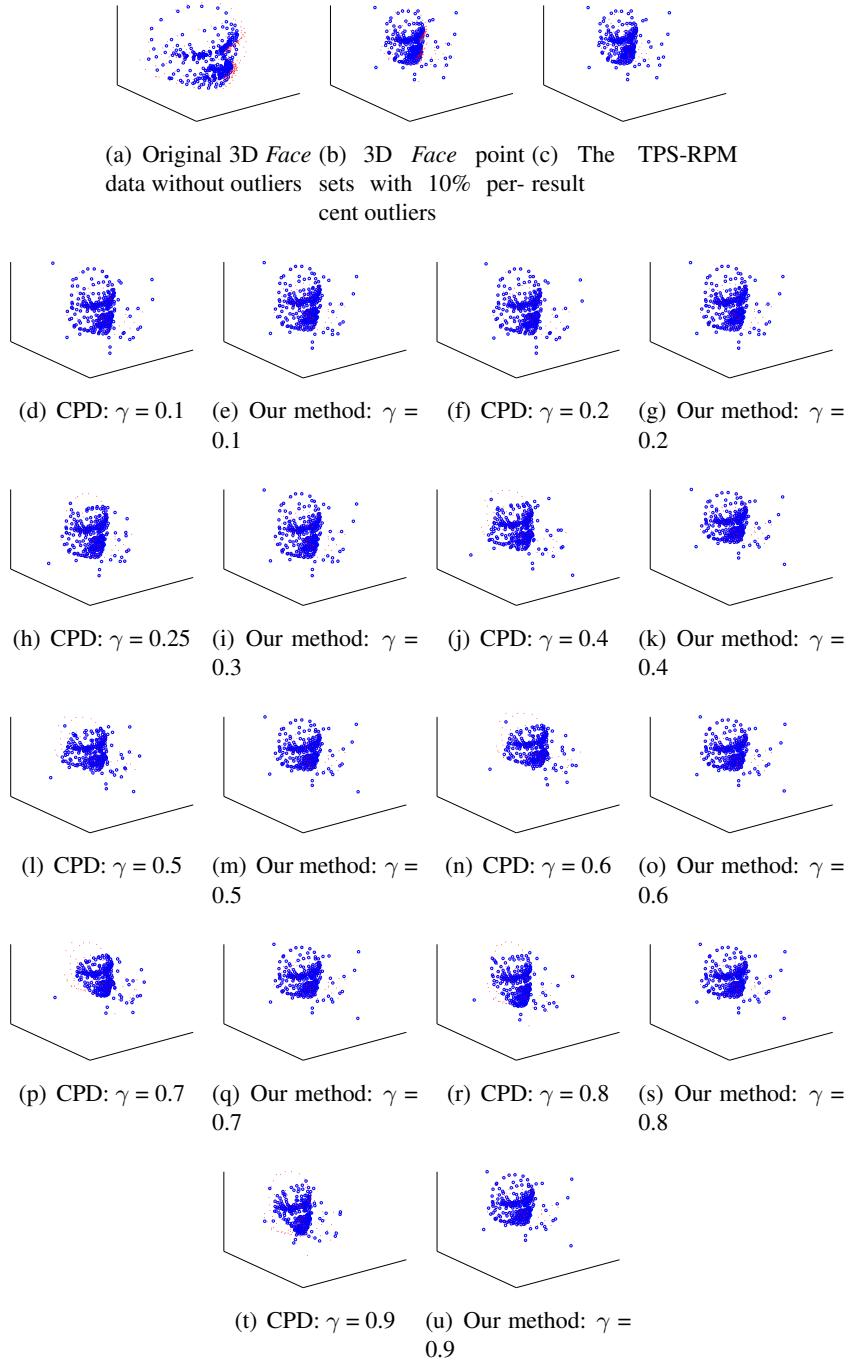


Figure 11: One of 100 runs on 3D Face point sets, the real outlier ratio is 10%

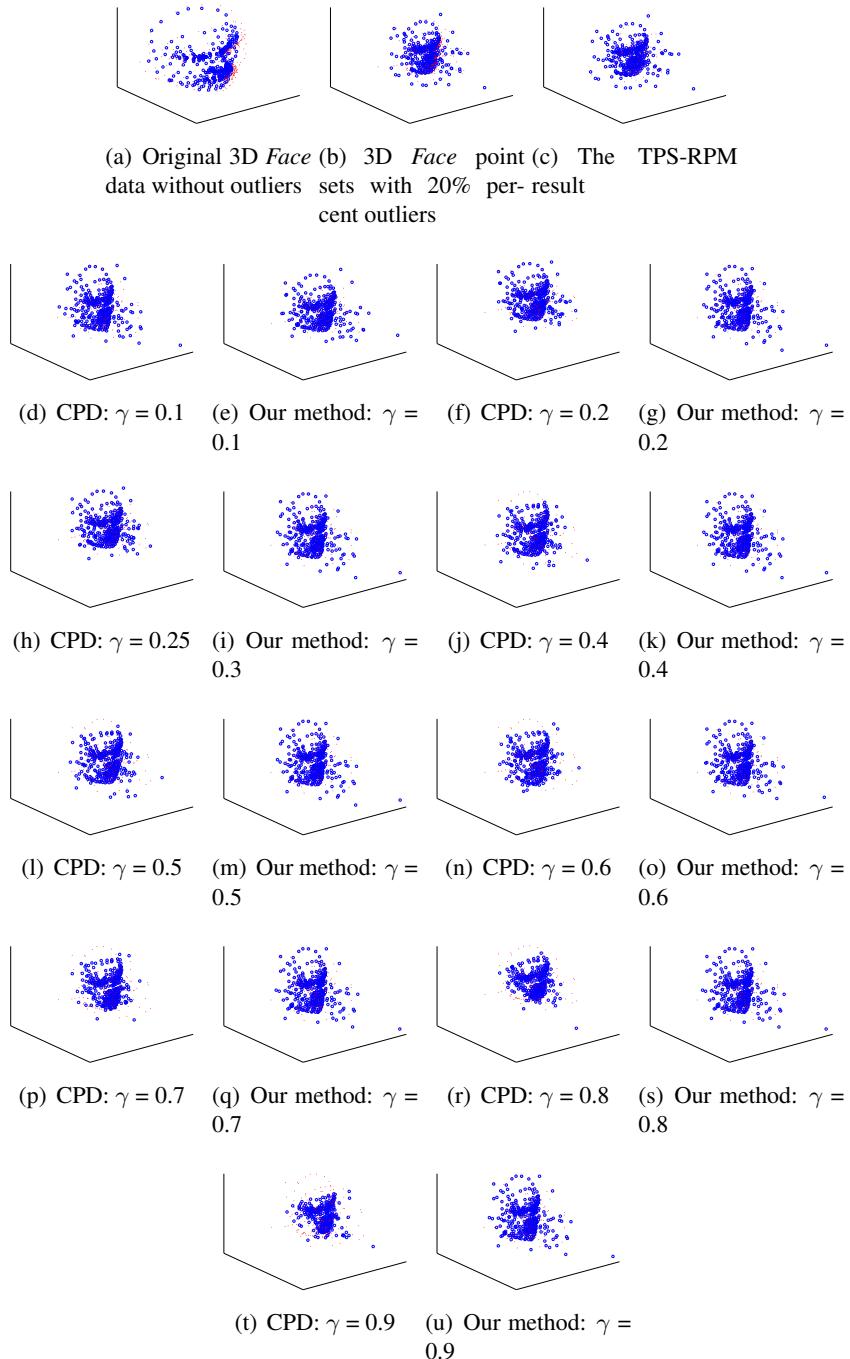


Figure 12: One of 100 runs on 3D Face point sets, the real outlier ratio is 20%

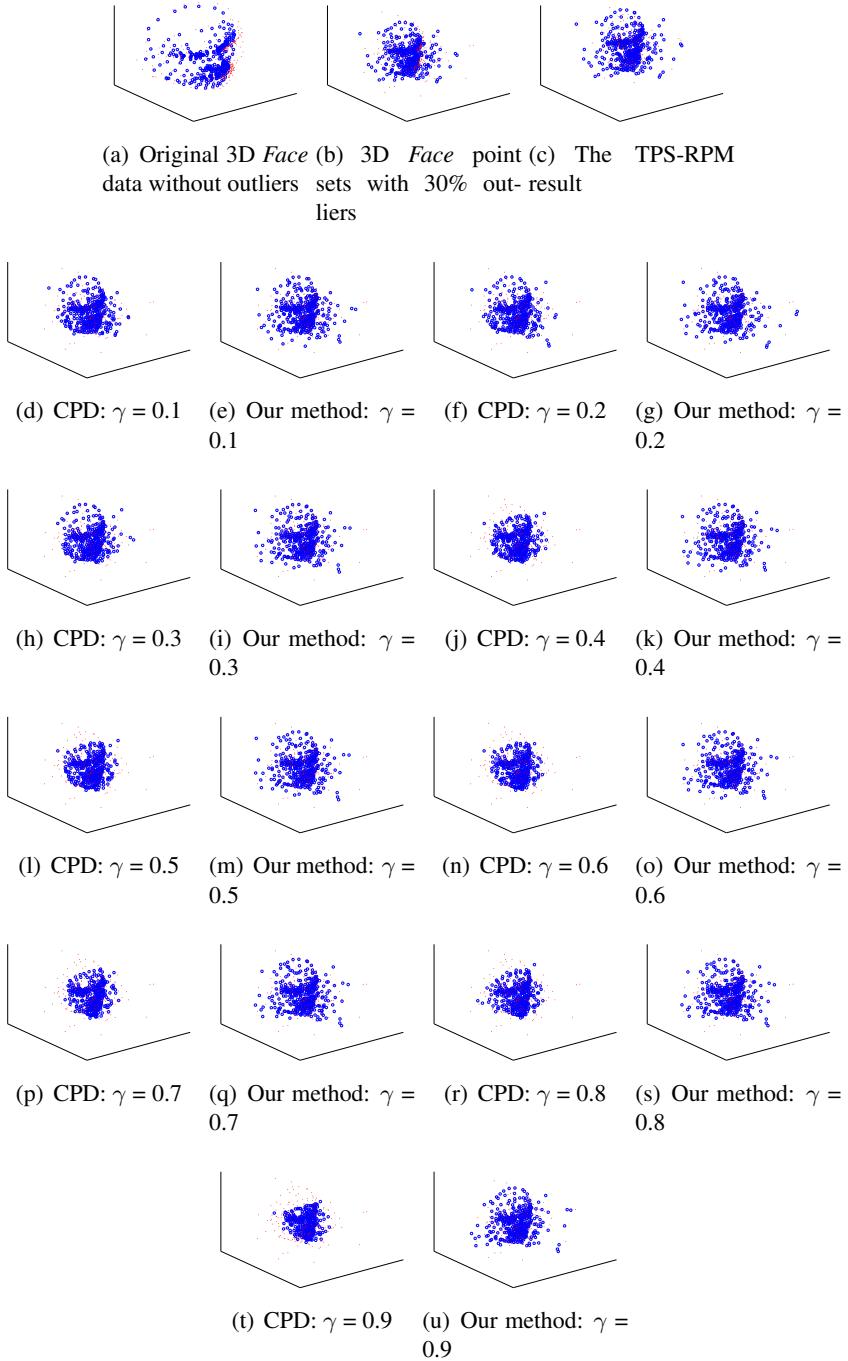


Figure 13: One of 100 runs on 3D Face point sets, the real outlier ratio is 30%

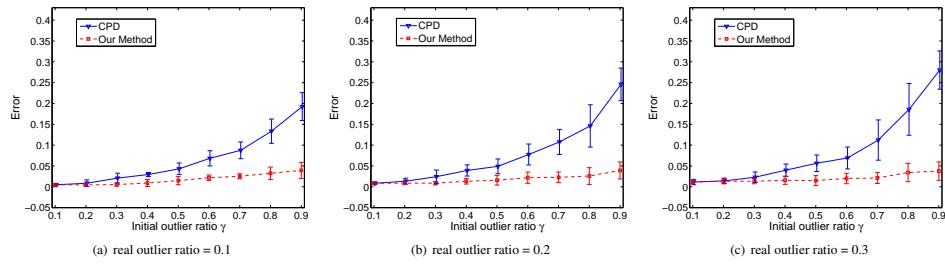


Figure 14: A comparison of CPD and our algorithm on *Face* data

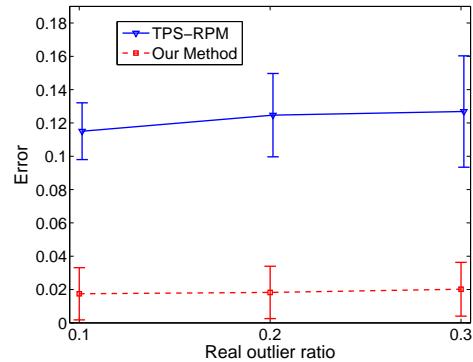


Figure 15: A comparison of TPS-RPM and our algorithm on *Face* data

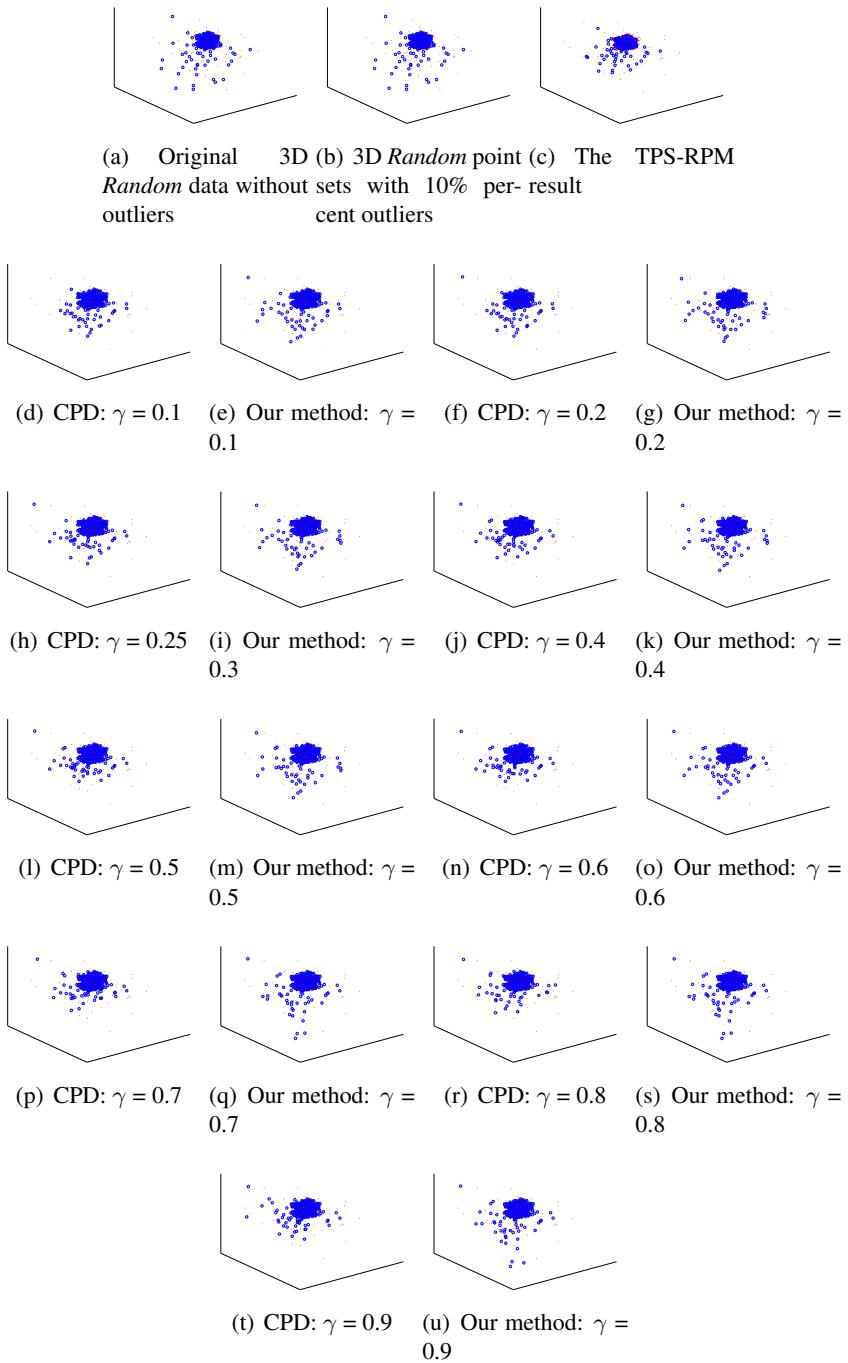


Figure 16: One of 100 runs on 3D Random point sets, the real outlier ratio is 10%

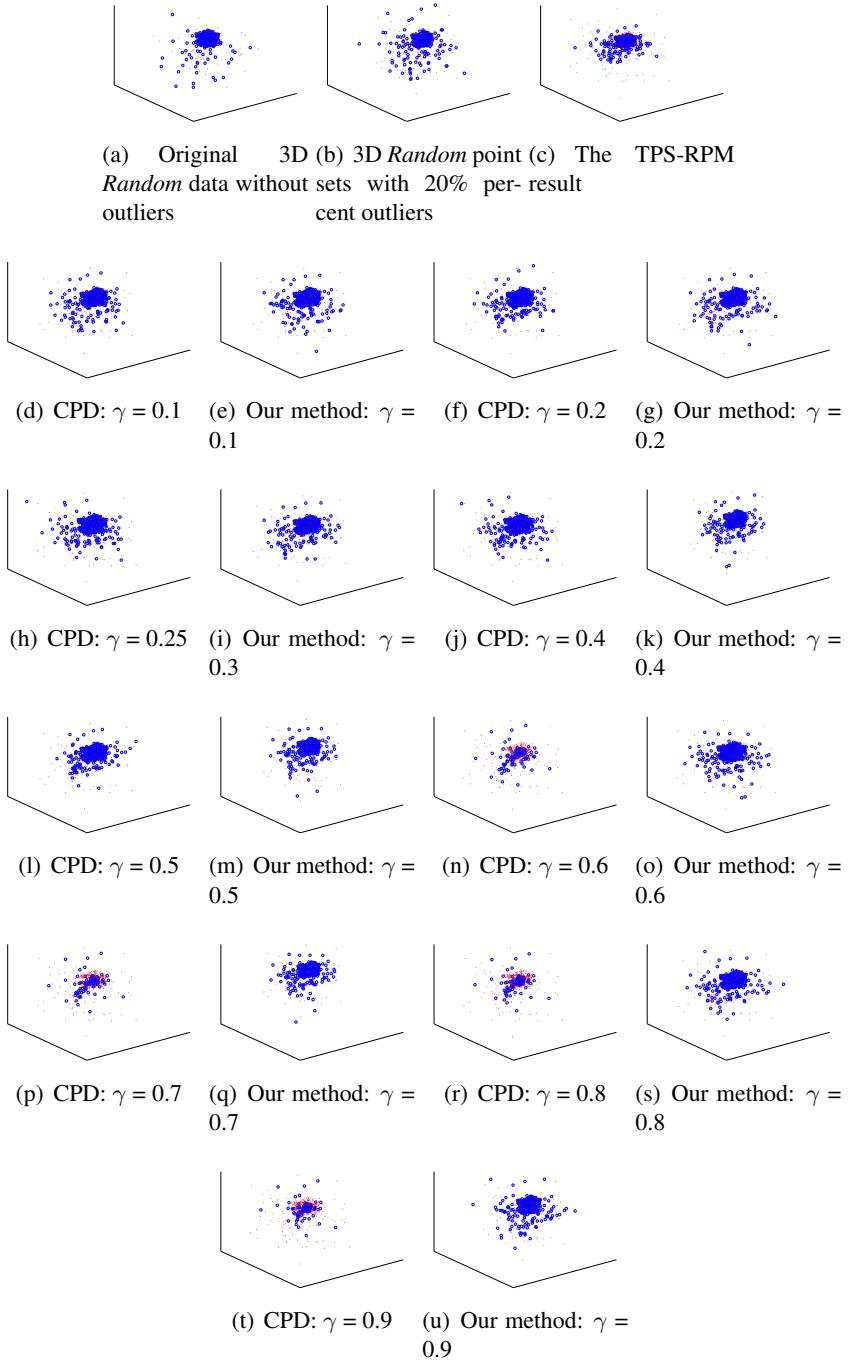


Figure 17: One of 100 runs on 3D Random point sets, the real outlier ratio is 20%

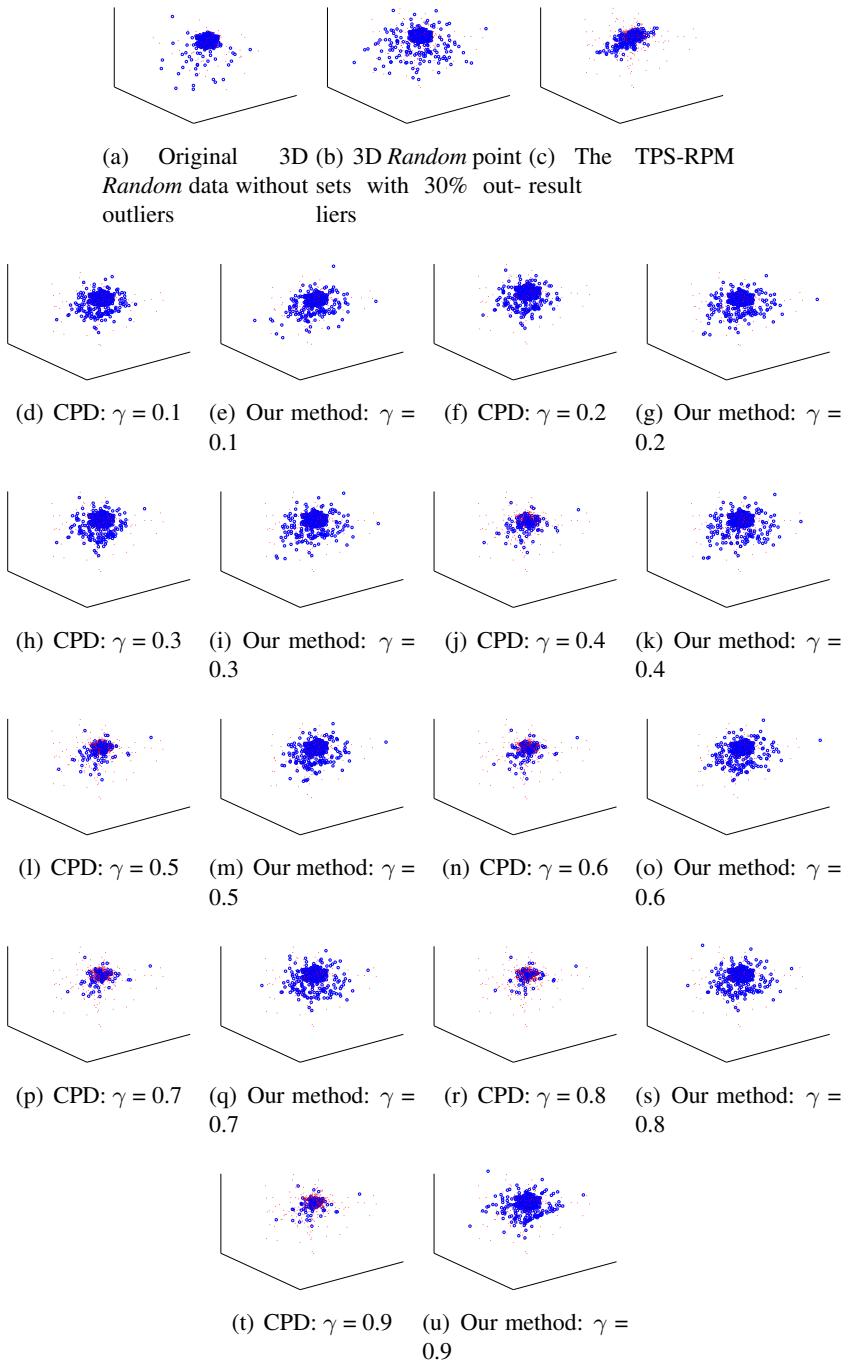


Figure 18: One of 100 runs on 3D *Random* point sets, the real outlier ratio is 30%

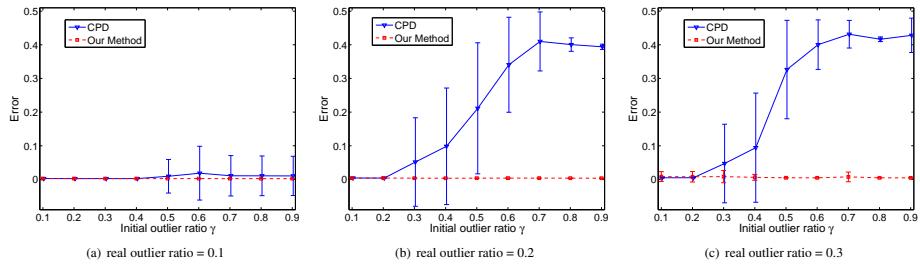


Figure 19: A comparison of CPD and our algorithm on *Random* data

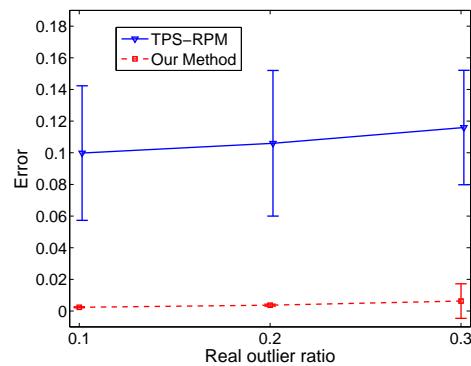


Figure 20: A comparison of TPS\_RPM and our algorithm on *Random* data