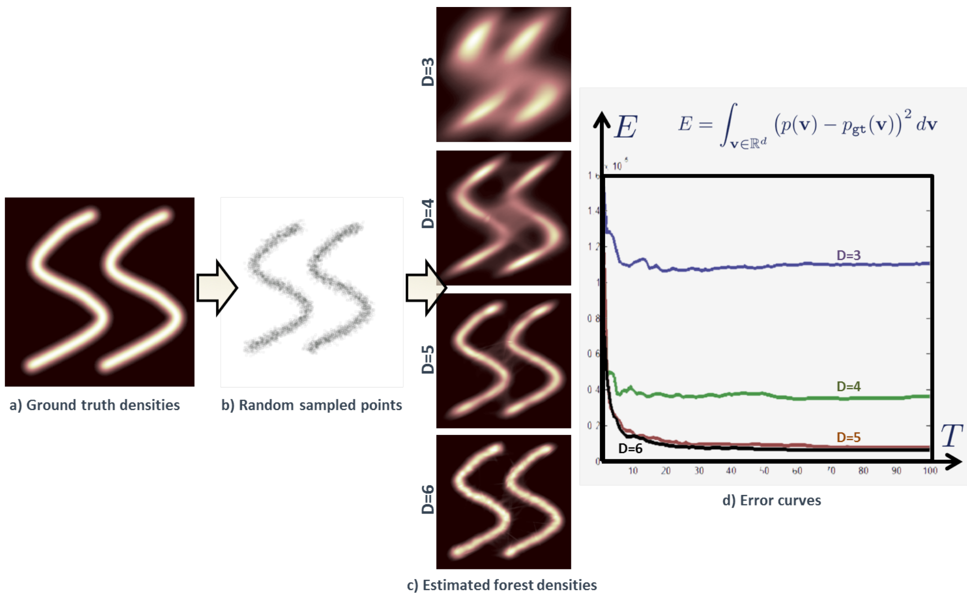

Fig. 5.17: **Quantitative evaluation of forest density estimation.** **(a)** An input ground-truth density (non-Gaussian in this experiment). **(b)** Thousands of random points drawn randomly from the density. The points are used to train four density forests with different depths. **(c)** During testing the forests are used to estimate density values for all points in a square domain. **(d)** The reconstructed densities are compared with the ground-truth and error curves plotted as a function of the forest size T. As expected, larger forests yield higher accuracy. In these experiments we have used four forests with $T = 100$ trees and $D \in \{3, 4, 5, 6\}$.

sum of squared differences:

$$E = \sum_{\mathbf{v}} \left(p(\mathbf{v}) - p_{\text{gt}}(\mathbf{v})\right)^2 \tag{5.10}$$

Alternatively one may consider the technique in [90]. Note that due to probabilistic normalization the maximum value of the error in (5.10) is 4. The curves in fig. 5.17d show how the reconstruction error diminishes with increasing forest size and depth. Unsurprisingly, in our