Fig. 2. Results of the color segmentation. Evaluation of the initialization procedure. (a) Input image. (b) Color segmentation result – Random initialization. (c) Color segmentation result – Heuristic initialization. (d,e,f) Color segmentation results – Color quantization. (d) Quantization level 4 - 2 bits per each color axis. (e) Quantization level 16 - 4 bits per each color axis. (f) Quantization level 64 - 6 bits per each color axis.
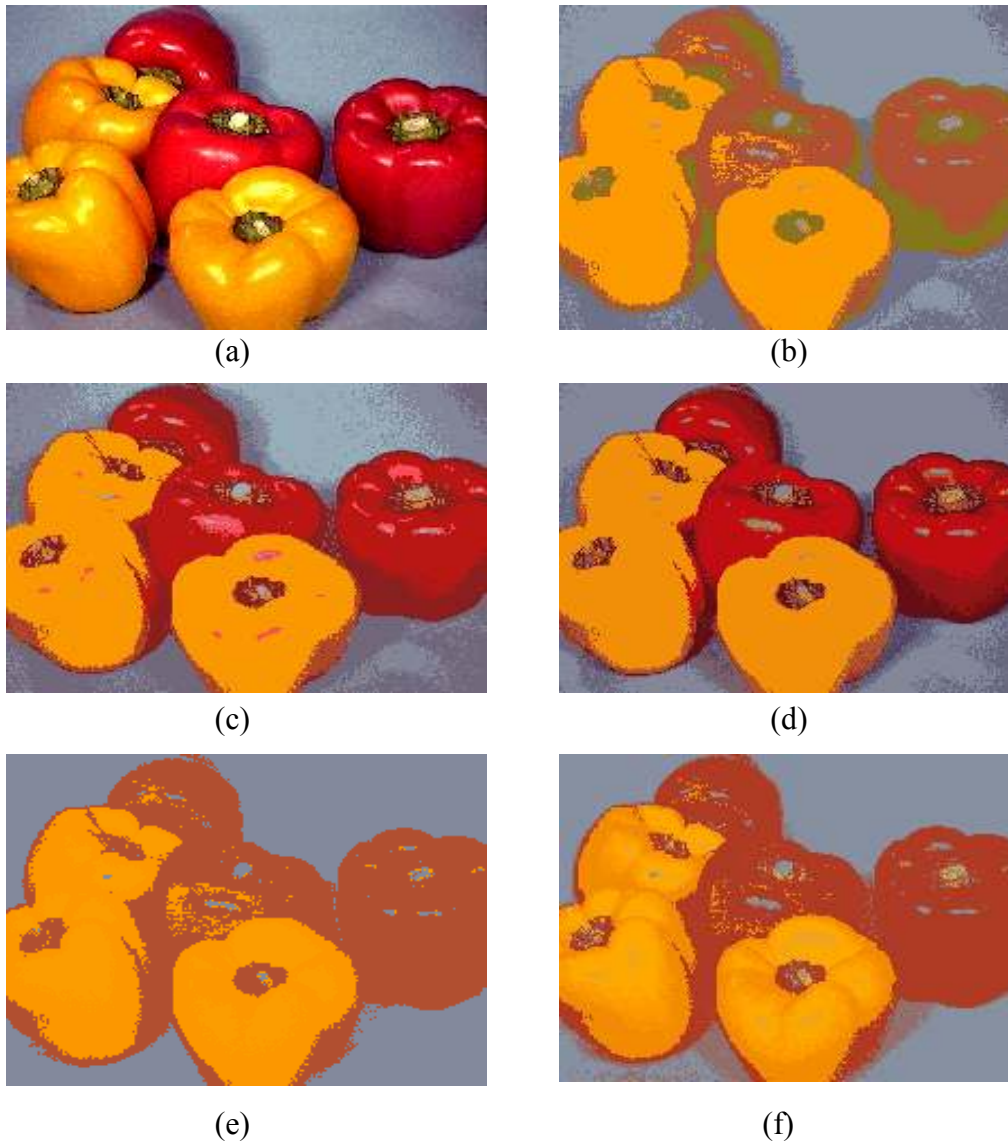
Fig. 3. Results of the color segmentation. Evaluation of the initialization procedure. (a) Input image. (b) Color segmentation result – Random initialization. (c) Color segmentation result – Heuristic initialization. (d,e,f) Color segmentation results – Color quantization. (d) Quantization level 4 - 2 bits per each color axis. (e) Quantization level 16 - 4 bits per each color axis. (f) Quantization level 64 - 6 bits per each color axis.
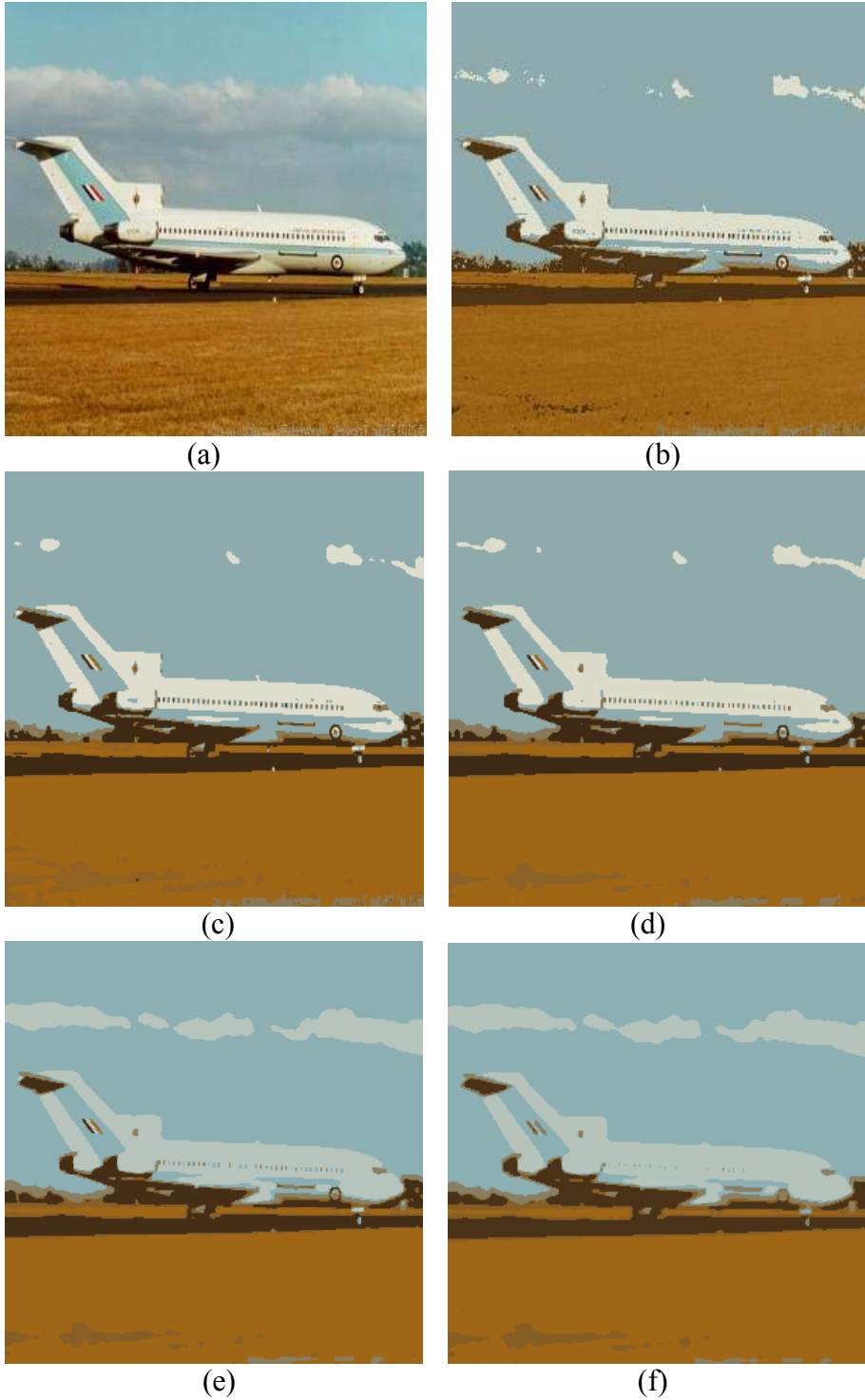
Fig. 4. Results of the color segmentation. Evaluation of the diffusion parameter. (a) Input noiseless image. (b) Color segmentation result – no diffusion. (c) Color segmentation result k=10. (d) Color segmentation result k=20. (e) Color segmentation result k=30. (f) Color segmentation result k=40.
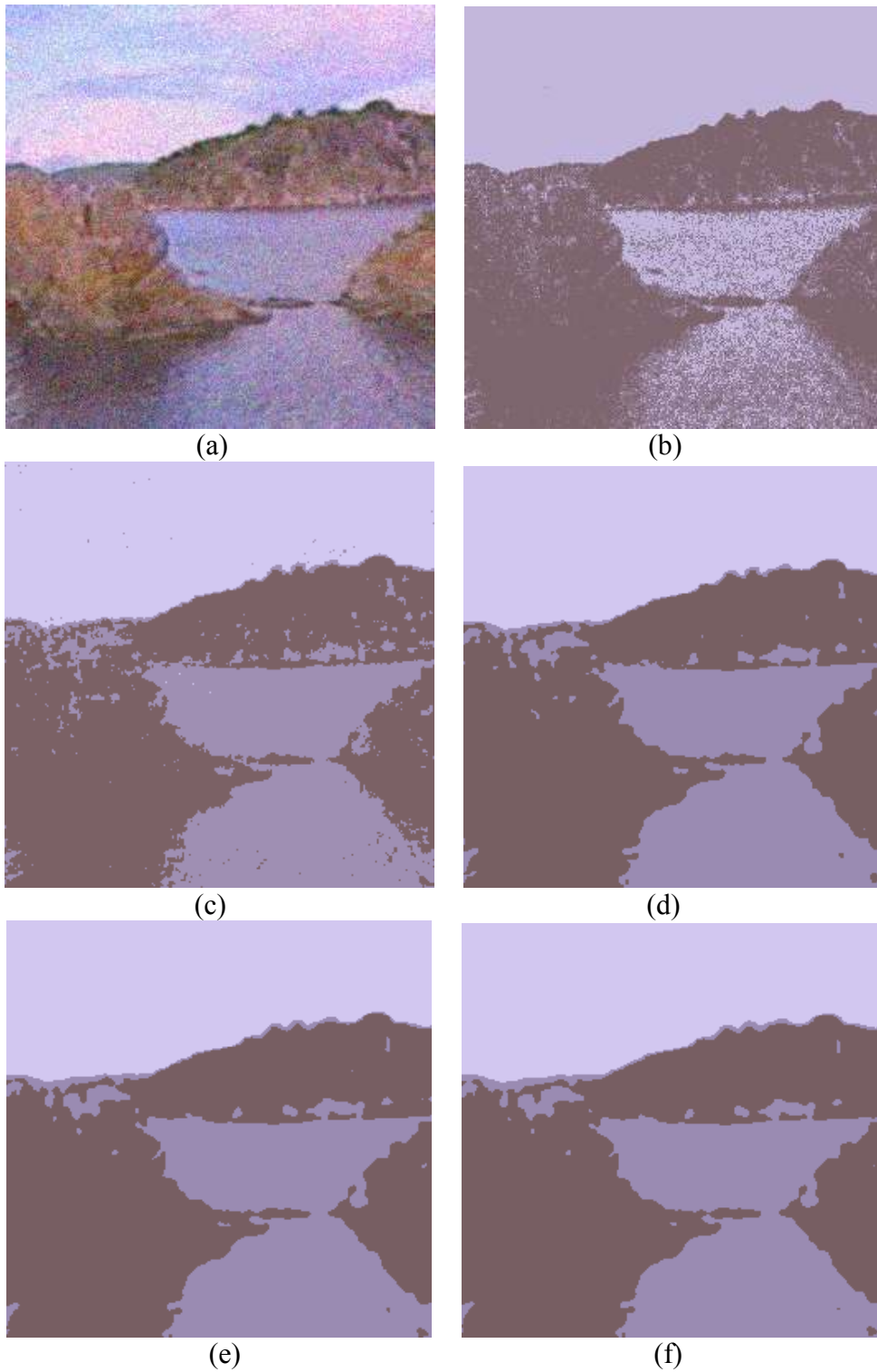
Fig. 5. Results of the color segmentation. Evaluation of the diffusion parameter. (a) Input nosy image. (b) Color segmentation result – no diffusion. (c) Color segmentation result k=10. (d) Color segmentation result k=20. (e) Color segmentation result k=30. (f) Color segmentation result k=40.
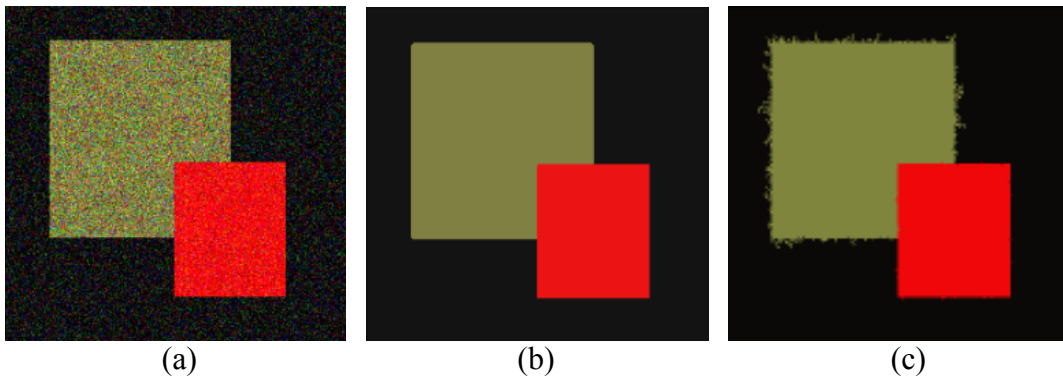
Fig. 6. Segmentation results. (a) Test Image corrupted with Gaussian noise (mean deviation: 50 grayscale levels for each color). (b) Segmented image – our method (initial number of mixtures = 10, final number of colors = 3). (c) Segmented image – Comaniciu-Meer algorithm (final number of colors = 3).
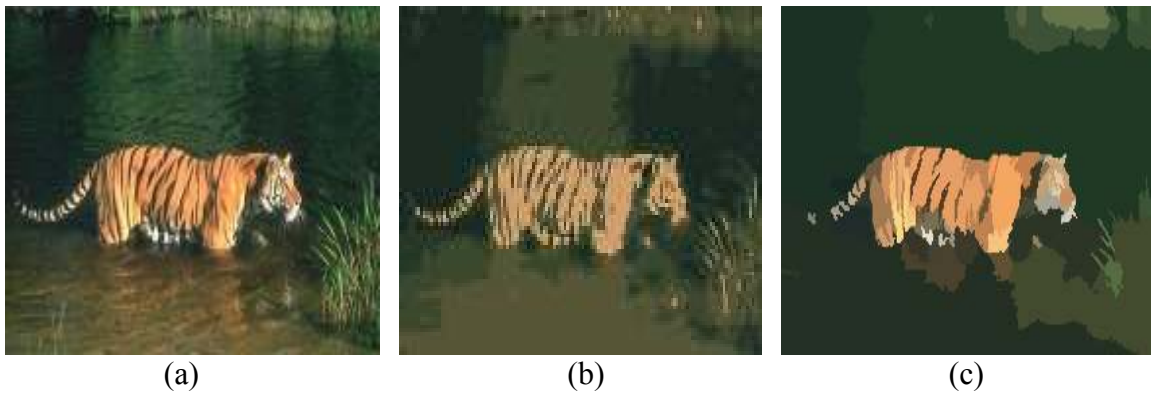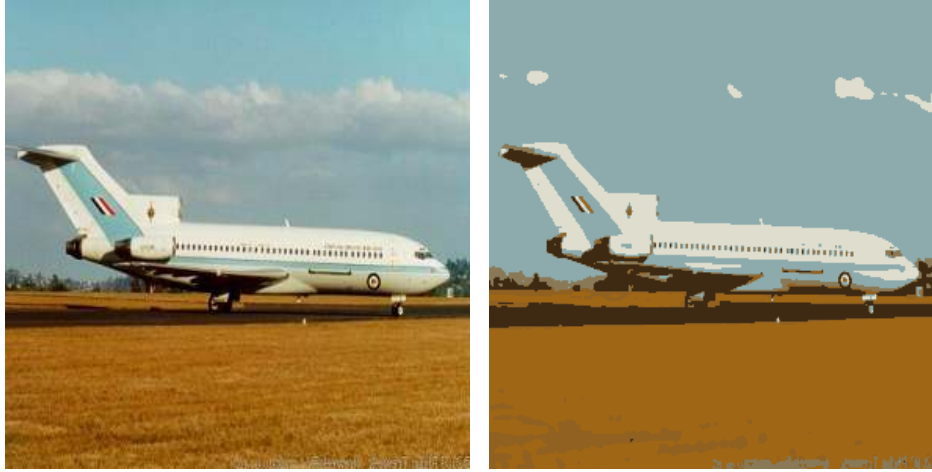

Fig. 7. Segmentation results. (a) Natural image (b) Segmented image – our method (initial number of mixtures = 10, final number of colors = 5). (c) Segmented image – Comaniciu-Meer algorithm (final number of colors = 70).

Fig. 8. Segmentation results using the color-texture segmentation algorithm outlined in Section 6. (a) Input image. (b) Color segmentation. (c) Color-texture segmentation.
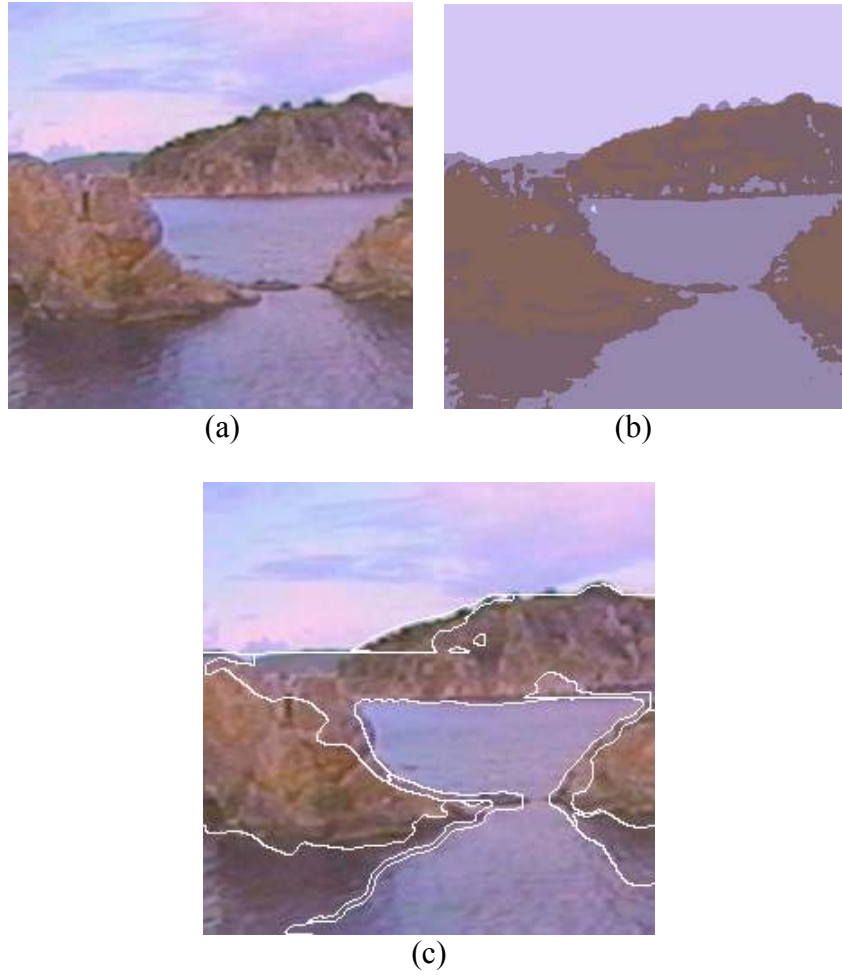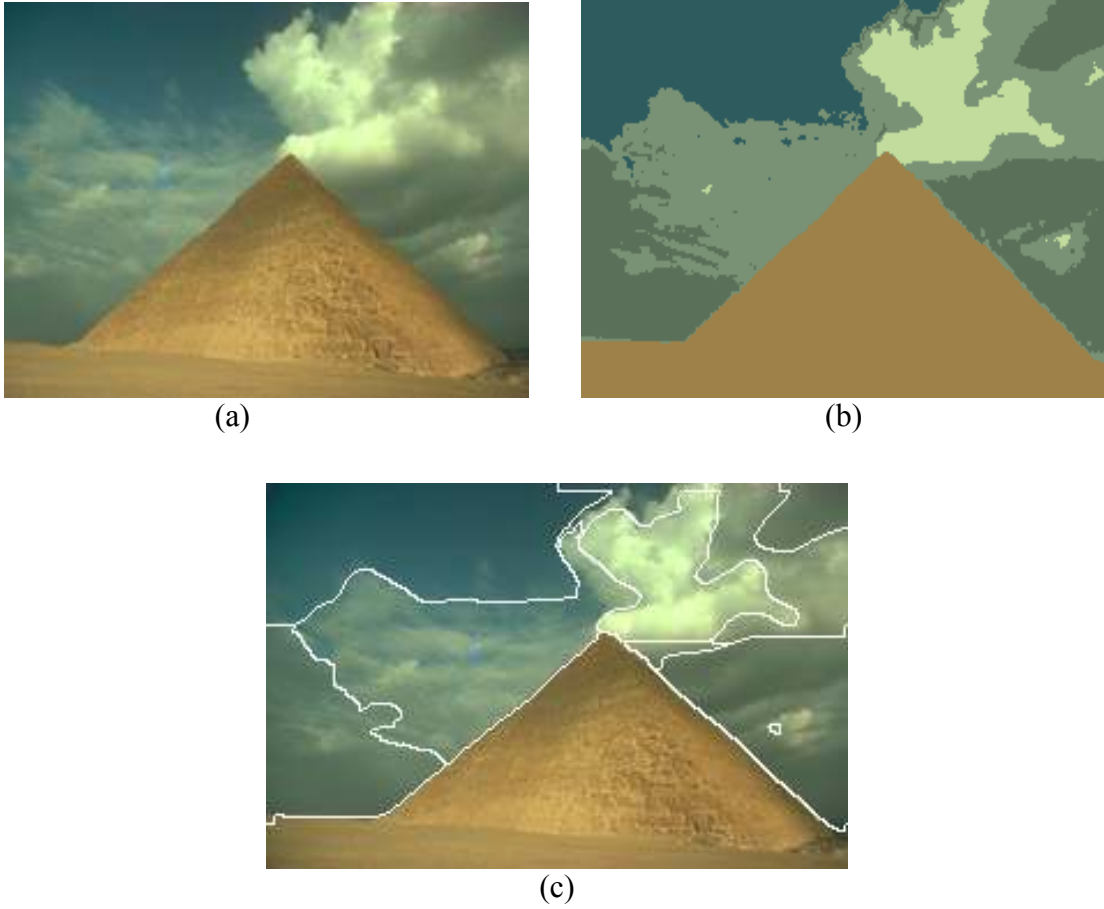
(a)

(b)

(c)

Fig. 9. Segmentation results using the color-texture segmentation algorithm outlined in Section 6. (a) Input image. (b) Color segmentation. (c) Color-texture segmentation.
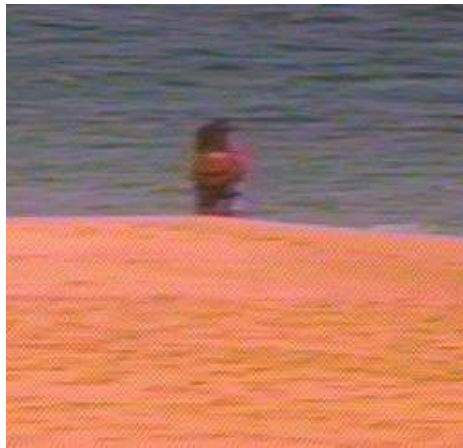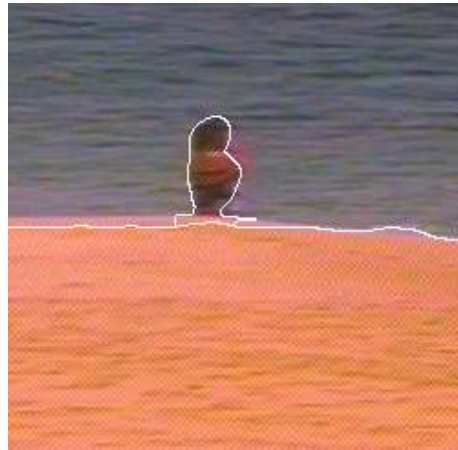
(a)

(b)

(c)

Fig. 10. Segmentation results using the color-texture segmentation algorithm outlined in Section 6. (a) Input image. (b) Color segmentation. (c) Color-texture segmentation.

(a)

(b)

(c)

Fig. 11. Segmentation results. (a) Input natural image. (b) Color segmentation.
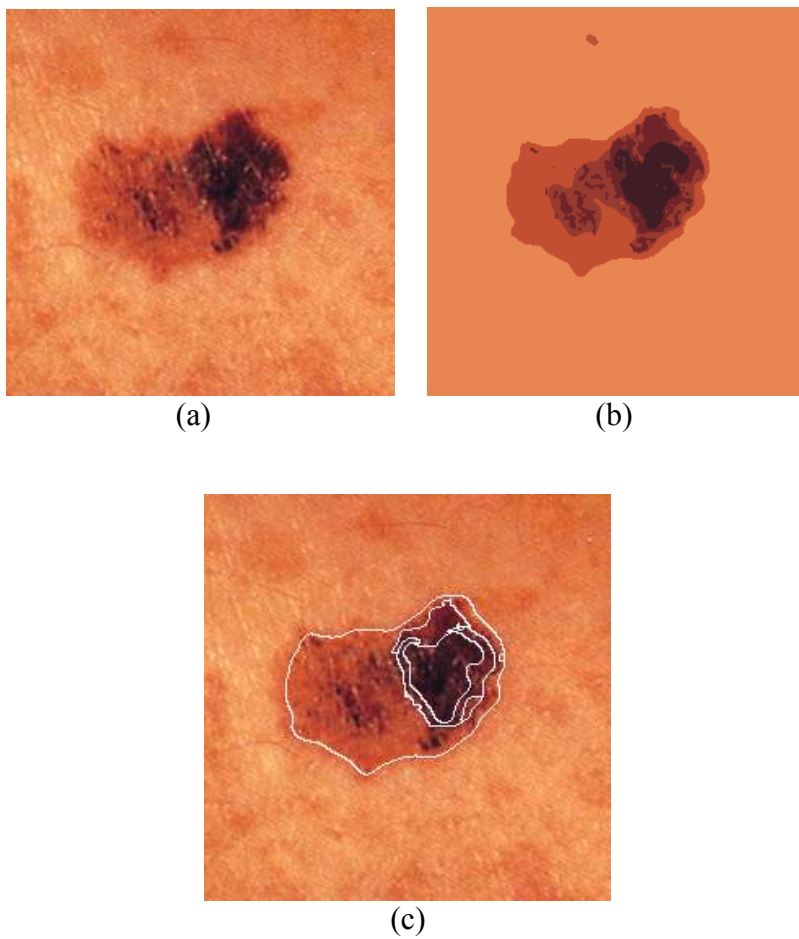(c) Color-texture segmentation.

Fig. 12. Segmentation results. (a) Input melanoma image. (b) Color segmentation. (c) Color-texture segmentation.
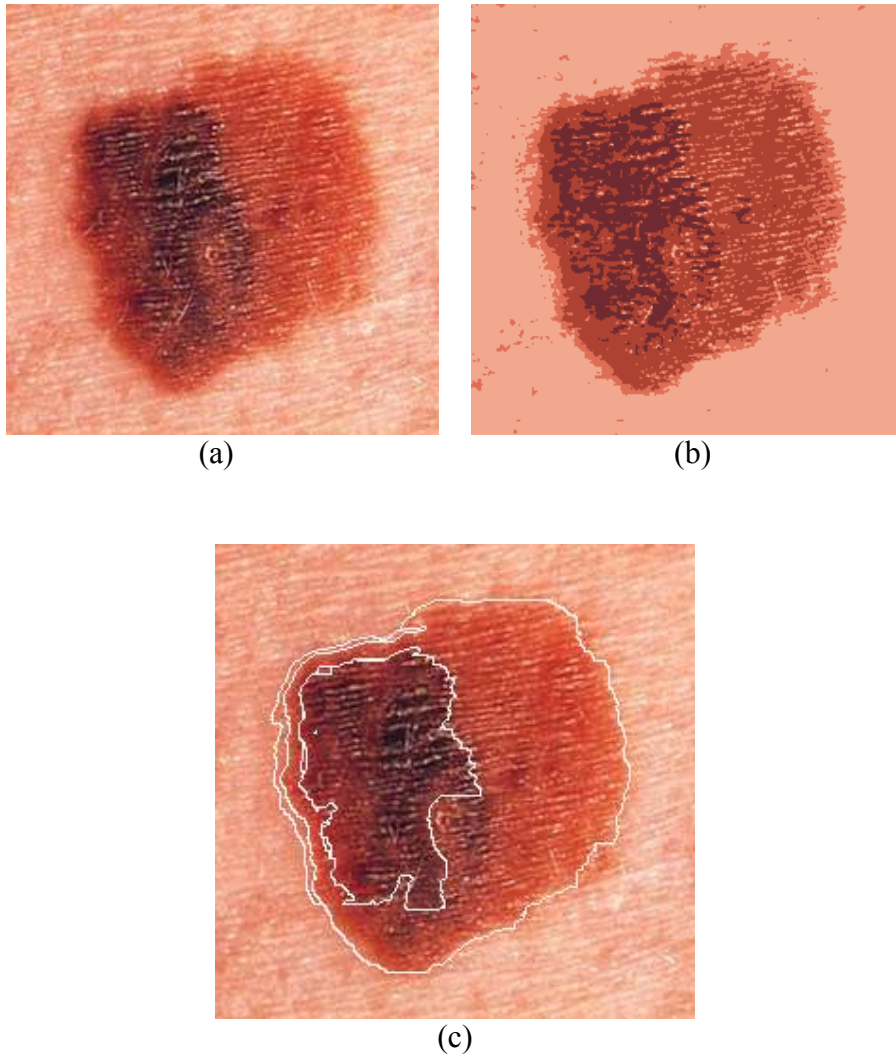
Fig. 13. Segmentation results. (a) Input melanoma image. (b) Color segmentation. (c) Color-texture segmentation.
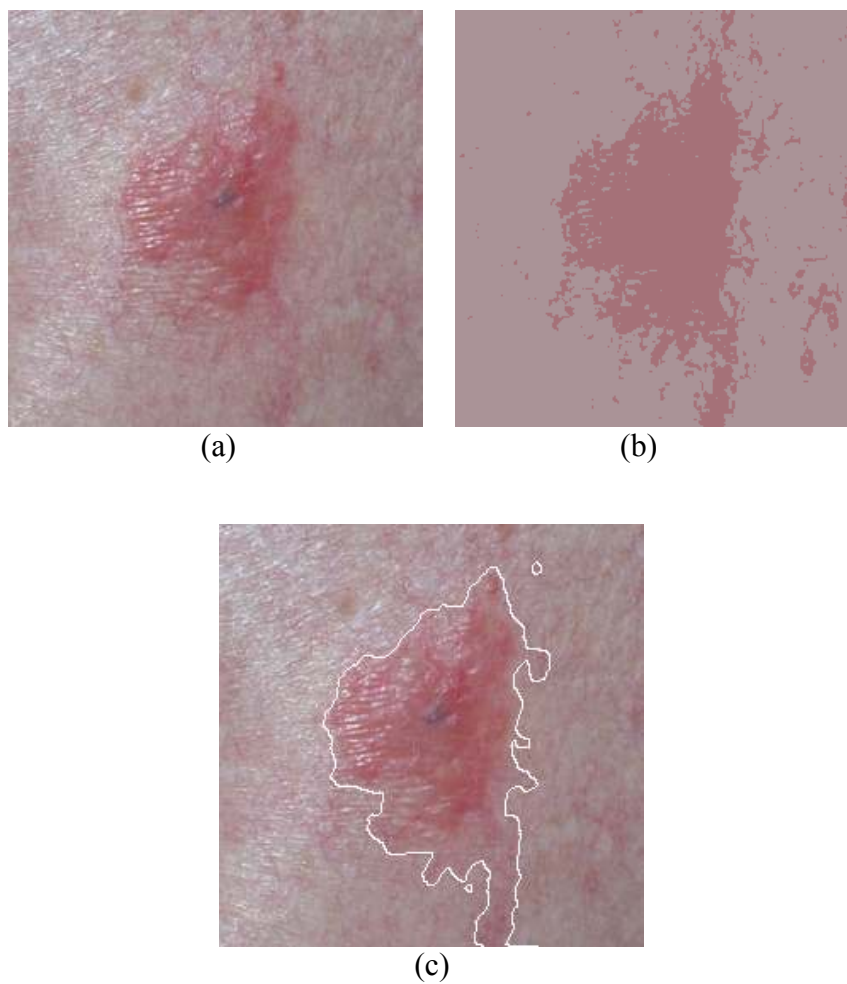
Fig. 14. Segmentation results. (a) Input melanoma image. (b) Color segmentation.
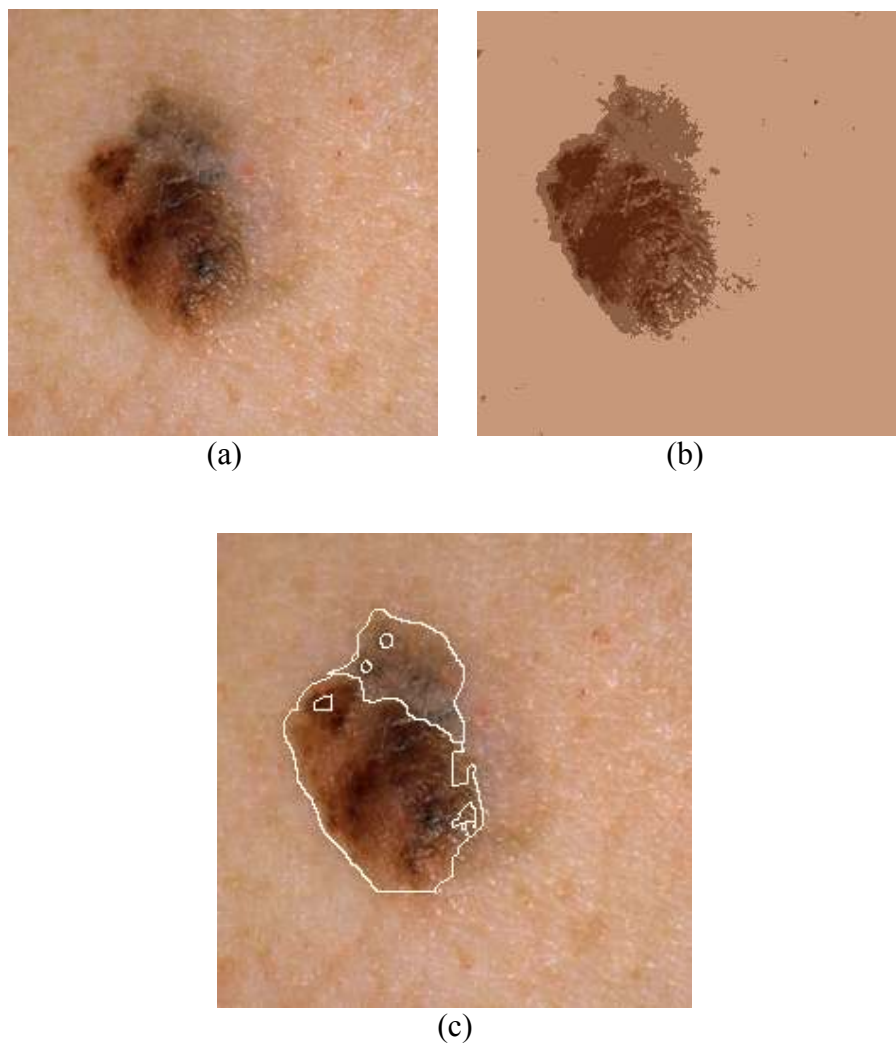(c) Color-texture segmentation.

Fig. 15. Segmentation results. (a) Input melanoma image. (b) Color segmentation.
(c) Color-texture segmentation.