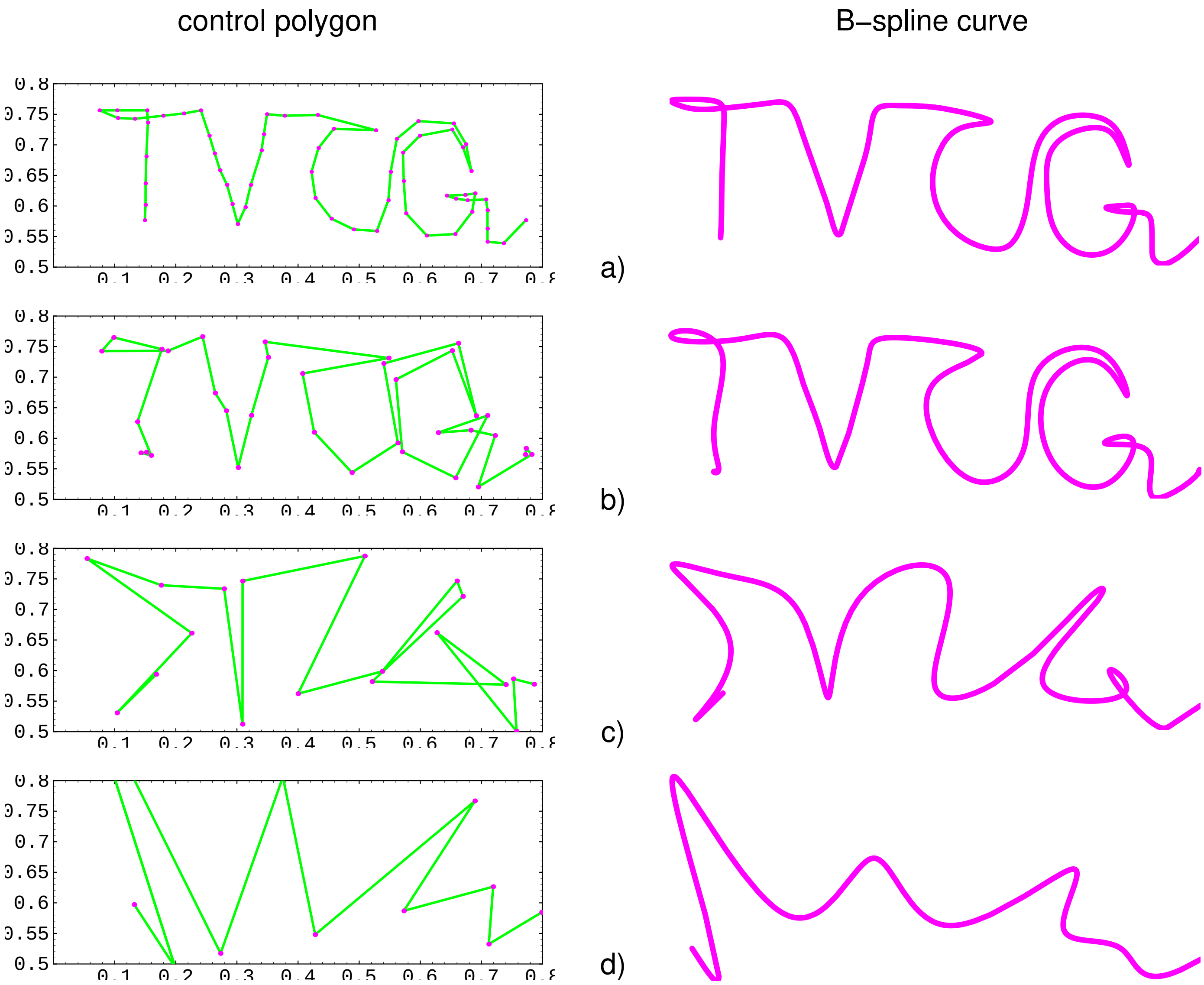
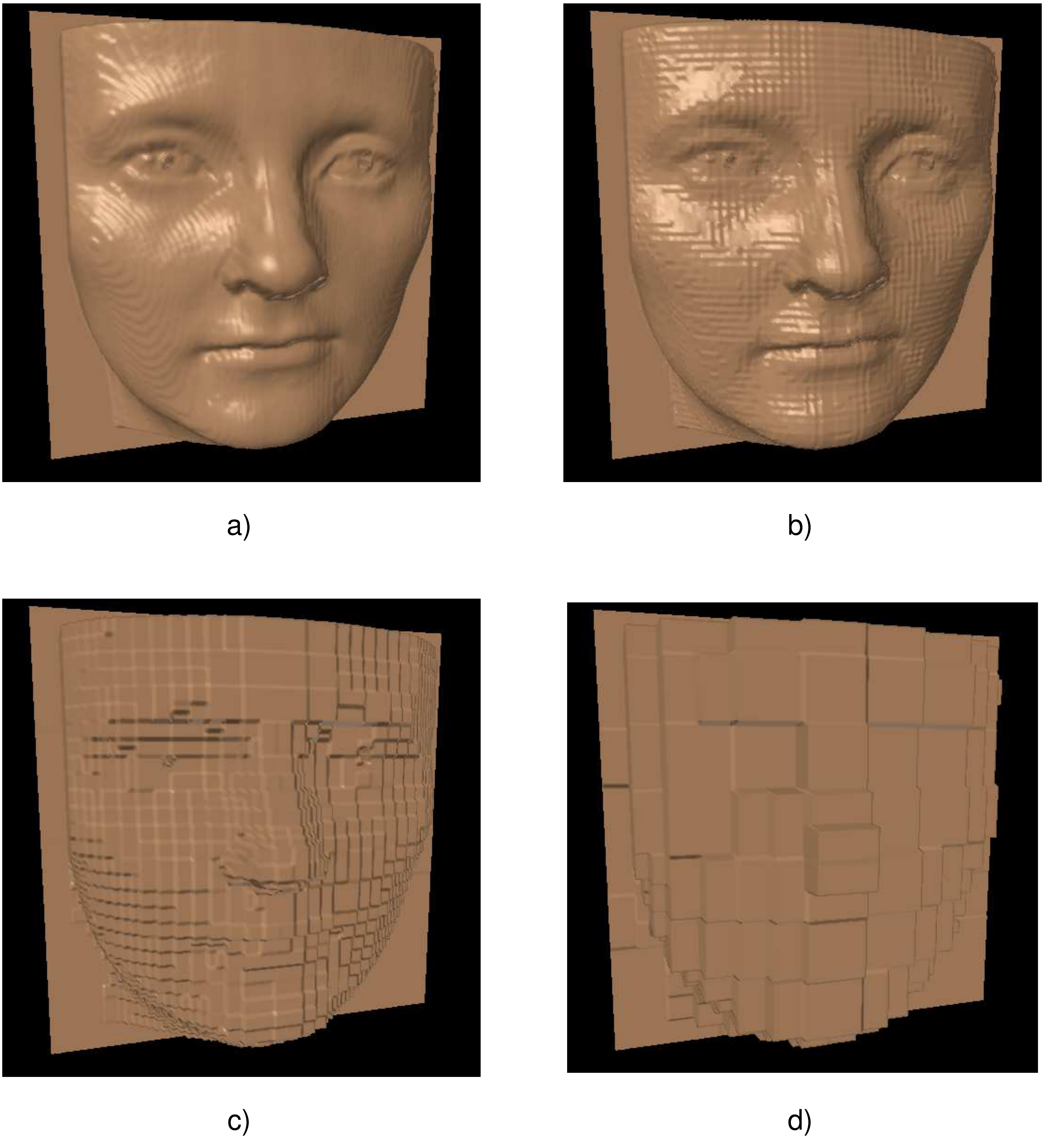
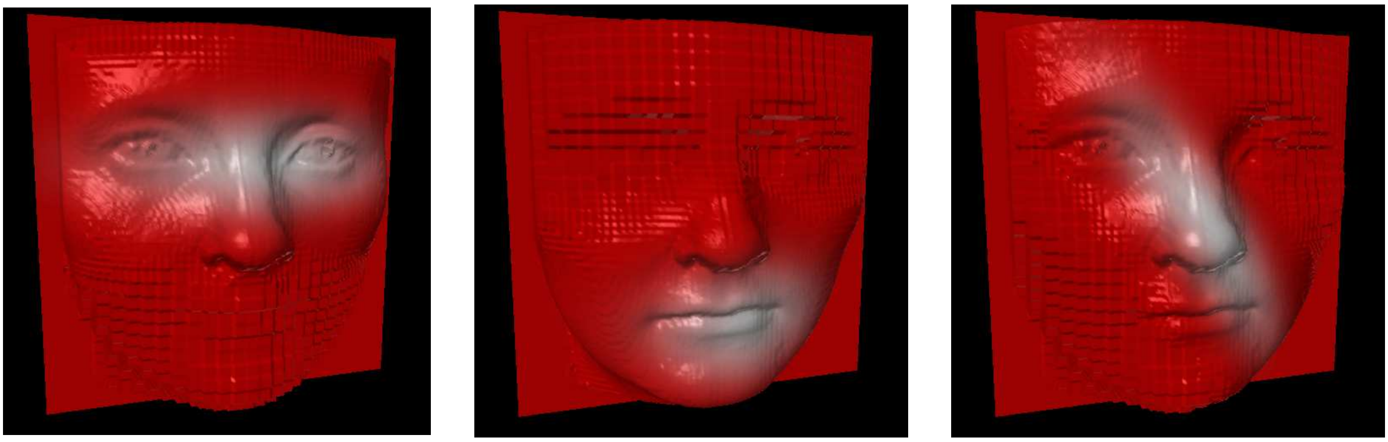


Fig. 19. Decomposition of a B-spline curve using cubig B-spline scaling functions of different resolution M: a) $M = 0$. b) $M = 1$. c) $M = 2$. d) $M = 3$.



a) b) c) d)

Fig. 20. Different levels of approximation of Sylvia's data set by global thresholding of Haar wavelets. C: percentage of remaining coefficients (data source courtesy ZGDV, Darmstadt).
a) $\tau = 0$, $C = 100\%$. b) $\tau = 1$, $C = 13.7\%$. c) $\tau = 100$, $C = 1.7\%$. d) $\tau = 10000$, $C = 0.2\%$.



a) b) c)

Fig. 21. Example for local level-of-detail filtering in wavelet space: Decomposition of Sylvia's face with Haar wavelets and filtering with different Gaussian space-frequency filters.
a) $\sigma_x = 80$, $\sigma_y = 80$, $\Theta = 0$. b) $\sigma_x = 50$, $\sigma_y = 30$, $\Theta = 0$ c) $\sigma_x = 80$, $\sigma_y = 20$, $\Theta = \pi/4$

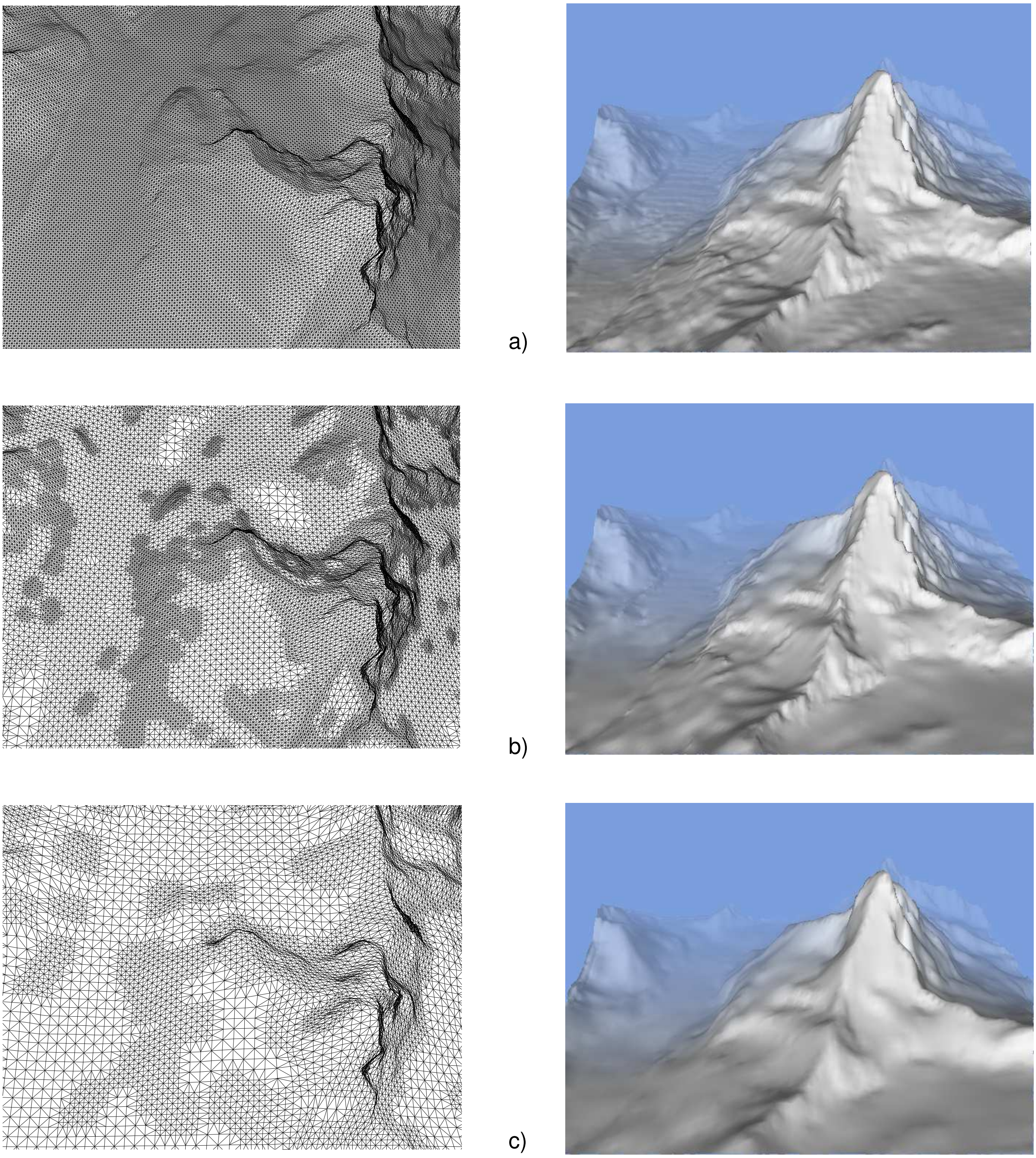


Fig. 22. Adaptive meshing of the digital terrain model: wireframe and Gouraud shaded. τ: threshold, C: remaining coefficients, T: no. of triangles, $\bar{\Delta}$: mean-square error (data source: courtesy provided by Bundesamt für Landestopographie, Bern, Switzerland).
a) $\tau = 0$, $C = 100\%$, $T = 131072$, $\bar{\Delta} = 2.8$. b) $\tau = 0.5$, $C = 18.6\%$, $T = 72386$, $\bar{\Delta} = 3.6$. c) $\tau = 15$, $C = 5.6\%$, $T = 29901$, $\bar{\Delta} = 7.2$.

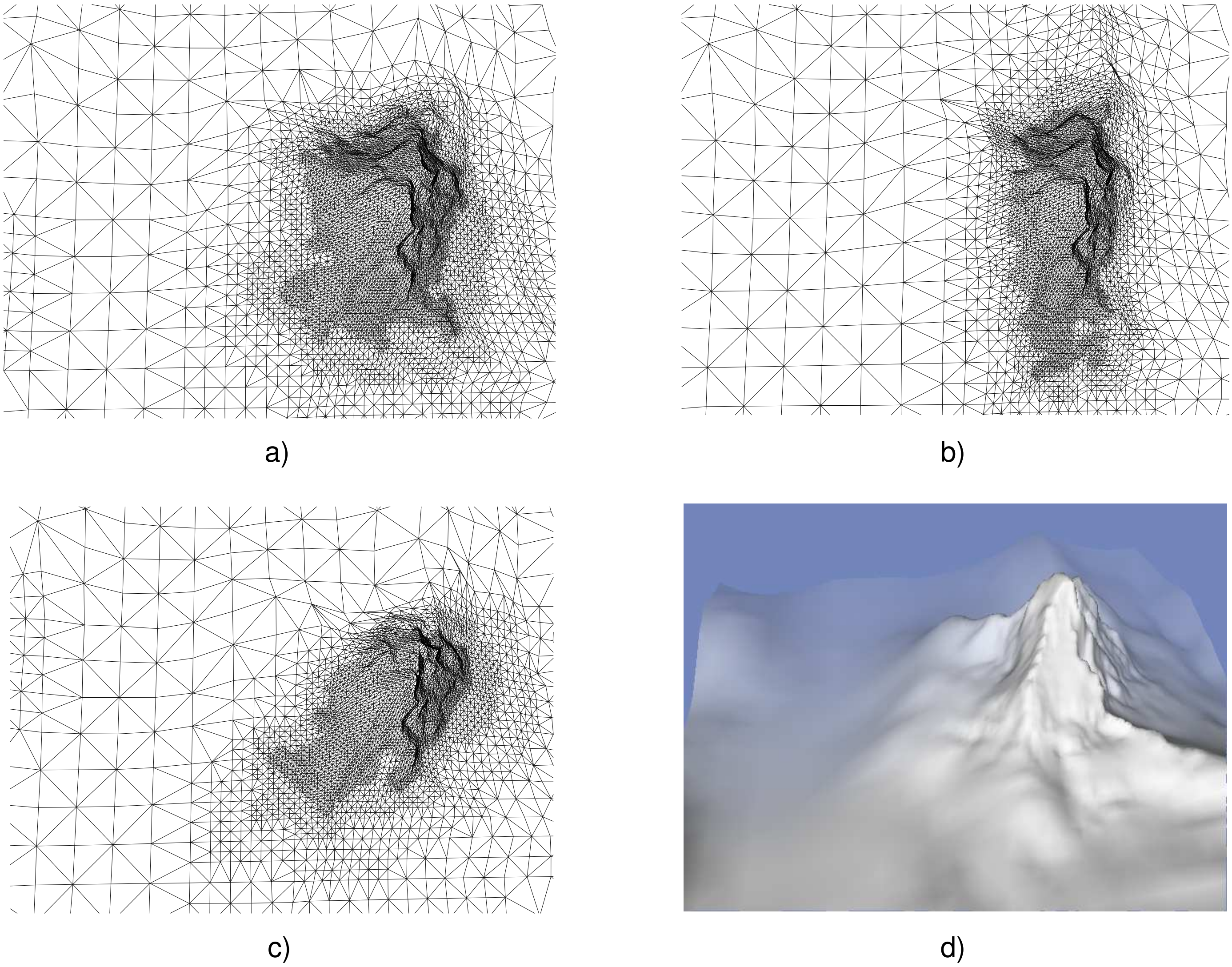


Fig. 23. Level-of-detail meshing using wavelet space filtering (C: remaining coefficients, T: no. of triangles): a) $\sigma_x = 20$, $\sigma_y = 20$, $\Theta = 0$, $C = 5.2\%$, $T = 14753$. b) $\sigma_x = 30$, $\sigma_y = 10$, $\Theta = 0$, $C = 4.2\%$, $T = 11920$. c) $\sigma_x = 20$, $\sigma_y = 10$, $\Theta = \pi/4$, $C = 2.3\%$, $T = 9101$. d) $\sigma_x = 20$, $\sigma_y = 20$, $\Theta = 0$, $C = 5.2\%$, $T = 14753$.

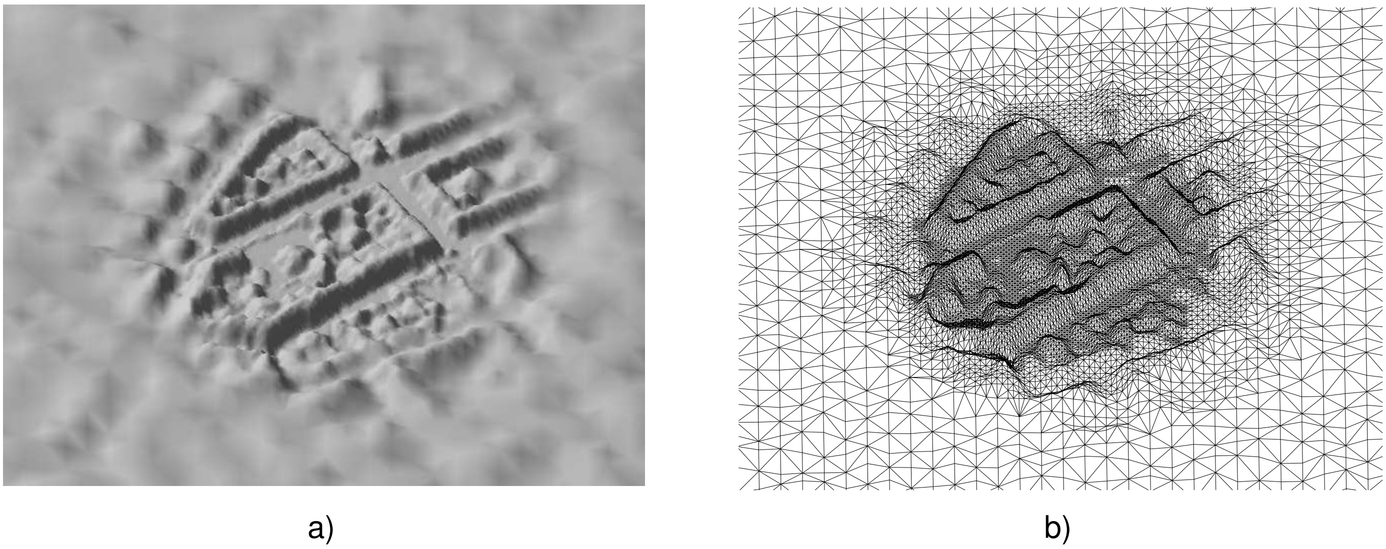


Fig. 24. Locally adaptive mesh of a laser range image of the city of Hannover: $C = 9.0\%$, $T = 19.7\%$:
a) mesh as a wireframe. b) Gouraud shaded image.
(data source: courtesy provided by Dornier GmbH, Germany)

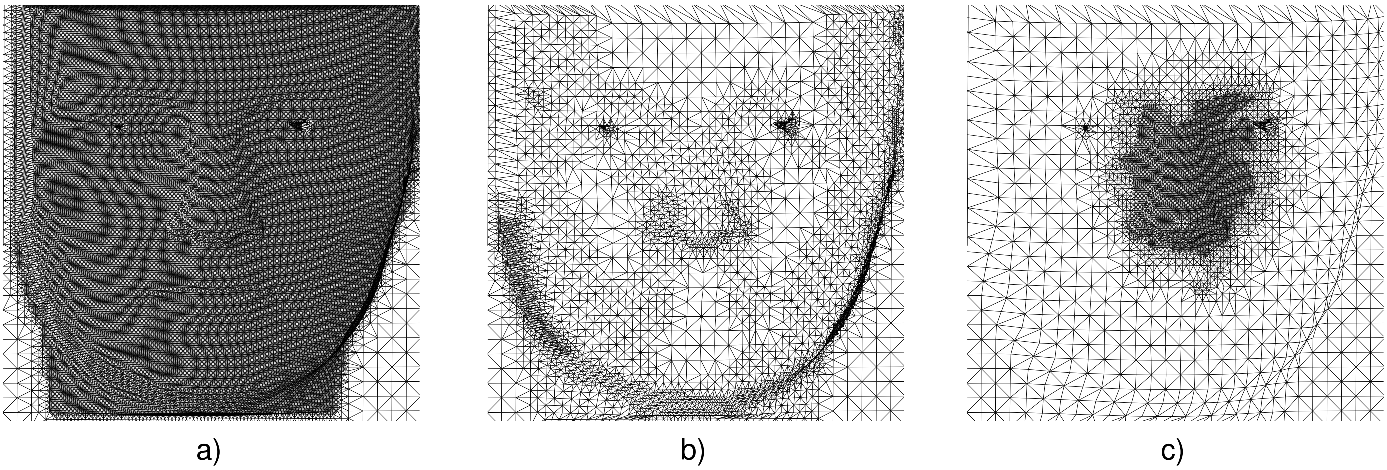


Fig. 25. Globally and locally reduced meshes of Sylvia's image:
a) original: $\tau = 0$, $C = 100\%$, $T = 95142$. b) global threshold: $\tau = 50$, $C = 3.1\%$, $T = 9900$ c) local threshold: $\sigma_x = 20$, $\sigma_y = 25$, $\Theta = 0$, $C = 5.9\%$, $T = 13876$.