Image restoration and segmentation using the Ambrosio-Tortorelli functional and discrete calculus *Supplementary material*

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Table I: Best PSNRs results are in bold.

	square $\sigma = 0.2$	square $\sigma = 0.4$	square $\sigma = 0.8$	diamond $\sigma = 0.2$	diamond $\sigma = 0.4$
TV *et. al.* [3]	29.1528	23.7067	17.6858	27.3675	**21.8341**
Strekalovskyi *et. al.* [1]	30.3717	24.7827	17.3795	26.6616	21.1176
$\mathrm{AT}_\varepsilon^{2,0}$	30.7517	24.8512	17.1204	**27.7706**	21.7719
$\mathrm{AT}_\varepsilon^{0,1}$	**30.8439**	**25.2425**	**18.3949**	27.2441	21.6394

In this document, we present additional results of image restoration and segmentation using the discrete formulations of the Ambrosio-Tortorelli functional, compared with methods using TV relaxations of the Mumford-Shah functional and with the recent work of Strekalovskyi and Cremers [1].

References

[1] E. Strekalovskiy and D. Cremers, "Real-time minimization of the piecewise smooth mumford-shah functional," in *Computer Vision–ECCV 2014*. Springer, 2014, pp. 127–141.
[2] P. Getreuer, "Rudin-osher-fatemi total variation denoising using split bregman," *Image Processing On Line*, vol. 2, pp. 74–95, 2012.
[3] J. Duran, B. Coll, and C. Sbert, "Chambolle's projection algorithm for total variation denoising," *Image Processing On Line*, vol. 2013, pp. 311–331, 2013.

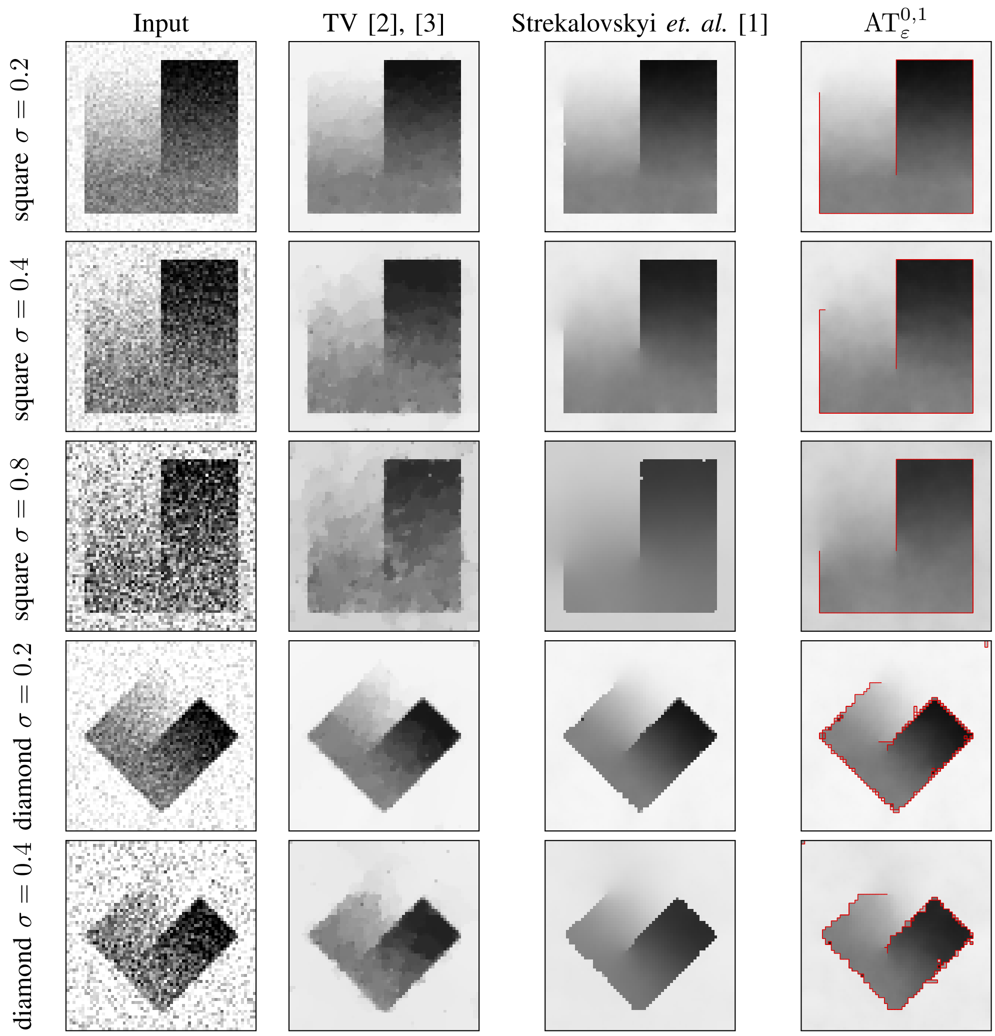

Figure 1: Comparison with competing methods. Noise level is specified in the first column. For all methods, we set the parameters that maximize the PSNR. We observe the characteristic staircasing effect with the TV methods. Strekalovskyi *et. al.* cand our method are robust to noise and yield piecewise smooth results.