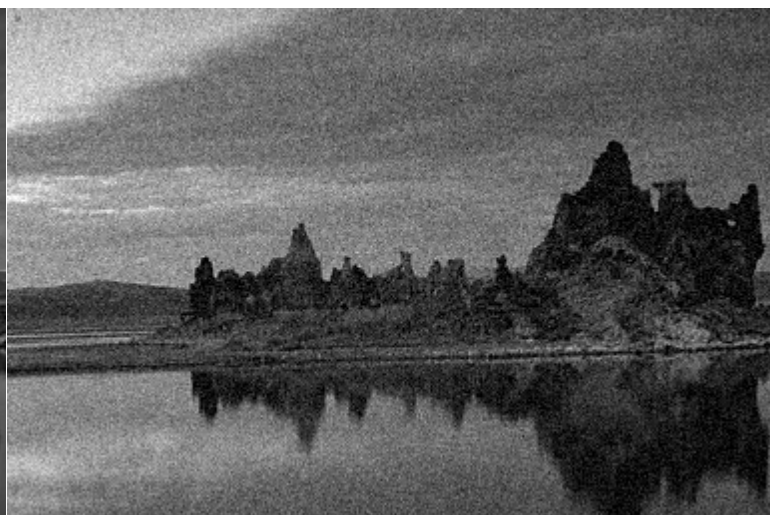


Supplementary Material to “External patch prior guided internal clustering for image denoising”

In the main paper, we have given the denoising results (PSNR) of the 100 test images on noise levels 15, 35, 55 and 75. Here we give the visual comparisons of the denoising outputs by the competing methods. It can be seen that our method has almost the same PSNR results as WNNM on all noise levels, and higher PSNR than BM3D and EPLL-GMM. More importantly, our method leads to better visual quality than WNNM and other methods, as demonstrated in our main paper.



(a) Clean image



(b) Noisy image (sigma=15)



(c) BM3D:PSNR=34.81dB



(d) EPLL:PSNR=34.82dB



(e) WNNM:PSNR=34.98dB



(f) Ours:PSNR=35.02dB



(a) Clean image



(b) Noisy image (sigma=15)



(c) BM3D:PSNR=32.01dB



(d) EPLL:PSNR=32.07dB



(e) WNNM:PSNR=32.12dB



(f) Ours:PSNR=32.23dB



(a) Clean image



(b) Noisy image (sigma=15)



(c) BM3D:PSNR=32.42dB



(d) EPLL:PSNR=32.64dB



(e) WNNM:PSNR=32.58dB



(f) Ours:PSNR=32.72dB



(a) Clean image



(b) Noisy image ($\sigma=35$)



(c) BM3D:PSNR=24.98dB



(d) EPLL:PSNR=25.12dB



(e) WNNM:PSNR=25.19dB



(f) Ours:PSNR=25.22dB



(a) Clean image



(b) Noisy image (sigma=35)



(c) BM3D:PSNR=28.75dB



(d) EPLL:PSNR=28.66dB



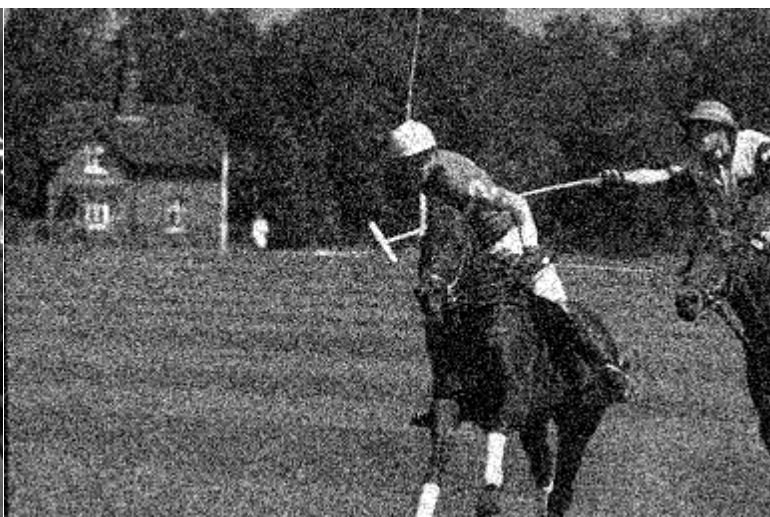
(e) WNNM:PSNR=28.77dB



(f) Ours:PSNR=28.79dB



(a) Clean image



(b) Noisy image (sigma=35)



(c) BM3D:PSNR=28.30dB



(d) EPLL:PSNR=28.34dB



(e) WNNM:PSNR=28.48dB



(f) Ours:PSNR=28.52dB



(a) Clean image



(b) Noisy image (sigma=55)



(c) BM3D:PSNR=24.01dB



(d) EPLL:PSNR=24.09dB



(e) WNNM:PSNR=24.17dB



(f) Ours:PSNR=24.18dB



(a) Clean image



(b) Noisy image (sigma=55)



(c) BM3D:PSNR=25.24dB



(d) EPLL:PSNR=25.20dB



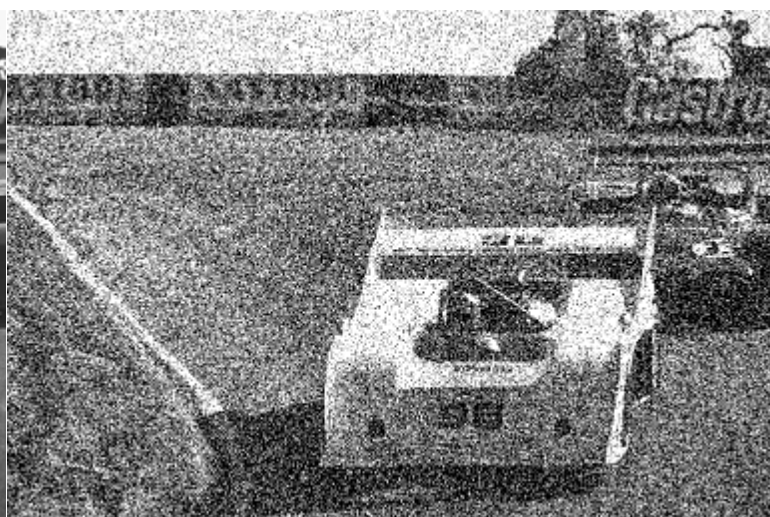
(e) WNNM:PSNR=25.37dB



(f) Ours:PSNR=25.37dB



(a) Clean image



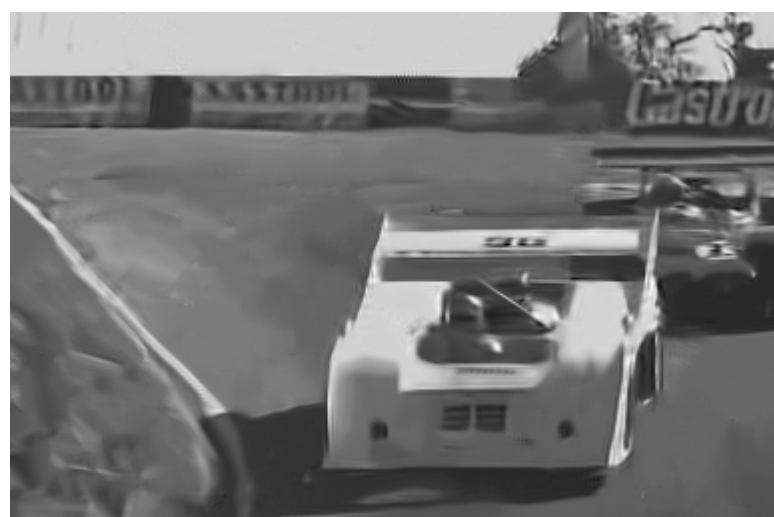
(b) Noisy image (sigma=55)



(c) BM3D:PSNR=25.44dB



(d) EPLL:PSNR=25.53dB



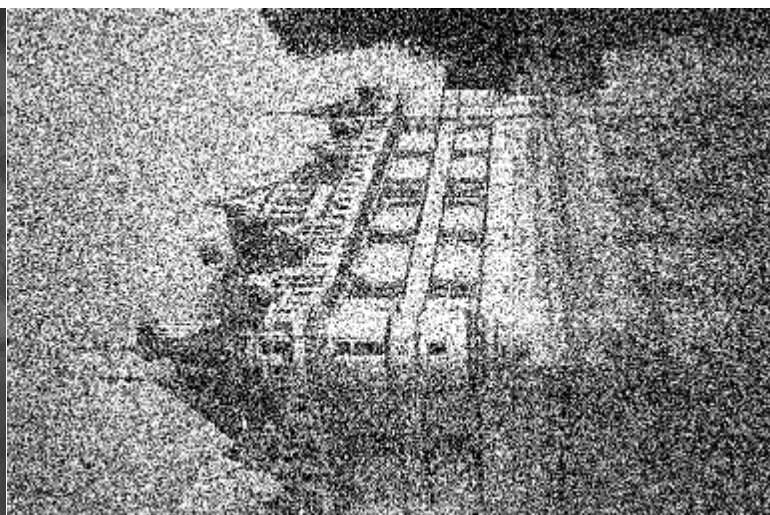
(e) WNNM:PSNR=25.72dB



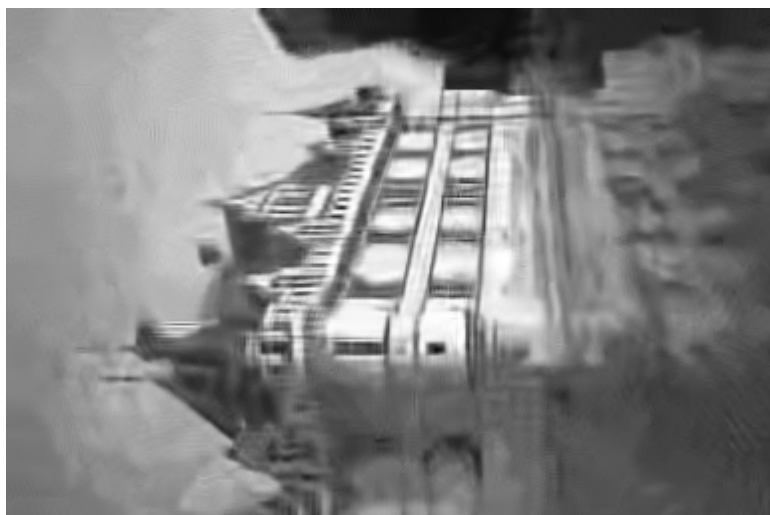
(f) Ours:PSNR=25.74dB



(a) Clean image



(b) Noisy image ($\sigma=75$)



(c) BM3D:PSNR=24.61dB



(d) EPLL:PSNR=24.49dB



(e) WNNM:PSNR=24.80dB



(f) Ours:PSNR=24.83dB



(a) Clean image



(b) Noisy image (sigma=75)



(c) BM3D:PSNR=23.9dB



(d) EPLL:PSNR=23.9dB



(e) WNNM:PSNR=24.09dB



(f) Ours:PSNR=24.09dB



(a) Clean image



(b) Noisy image (sigma=75)



(c) BM3D:PSNR=23.24dB



(d) EPLL:PSNR=23.30dB



(e) WNNM:PSNR=23.36dB



(f) Ours:PSNR=23.41dB