Supplementary Materials

CONTENTS

I. SET18 DATASET

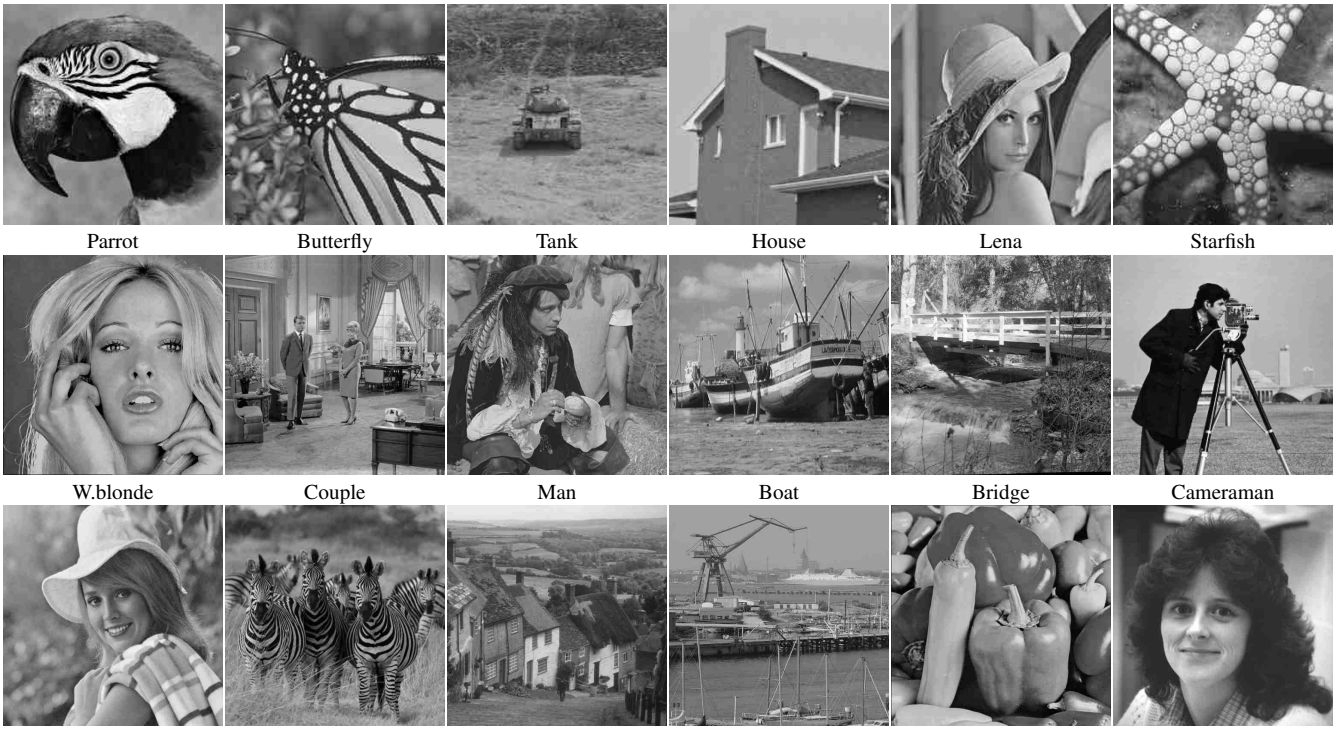


Fig. 1: The test images of Set18.

II. Visual comparison of deblurring in the presence of AWGN with known noise strength

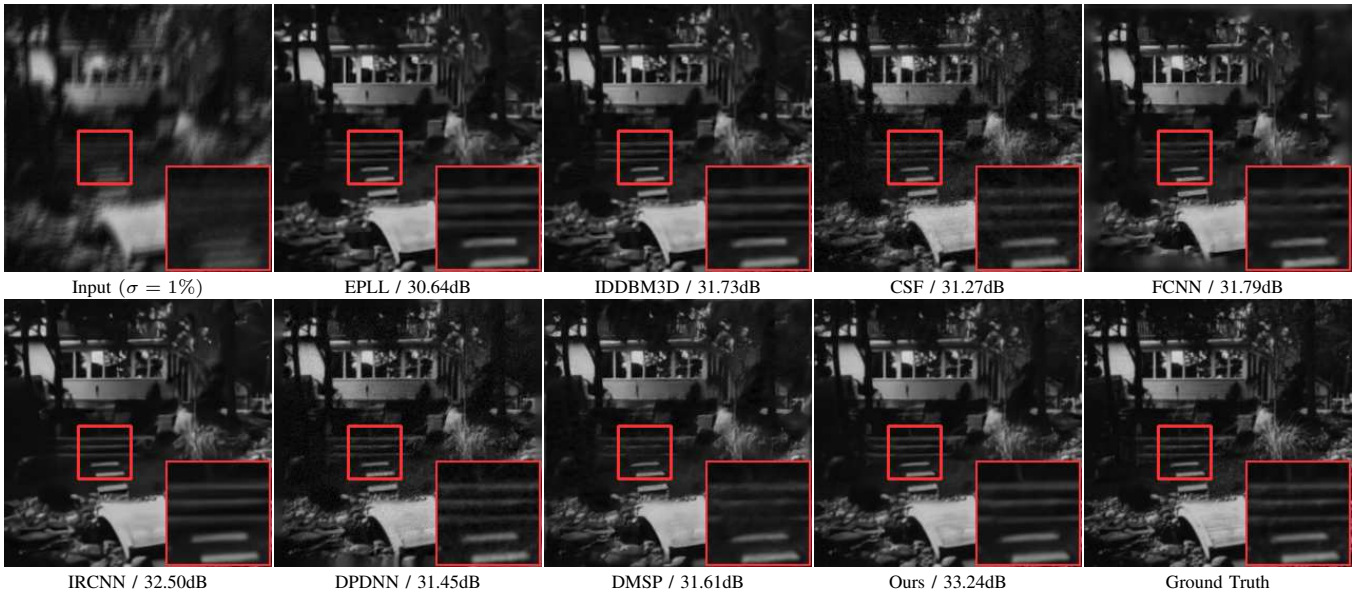


Fig. 2: Visual comparison of noise-nonblind deblurring results on one image of Levin *et al*.'s dataset in the presence of AWGN.

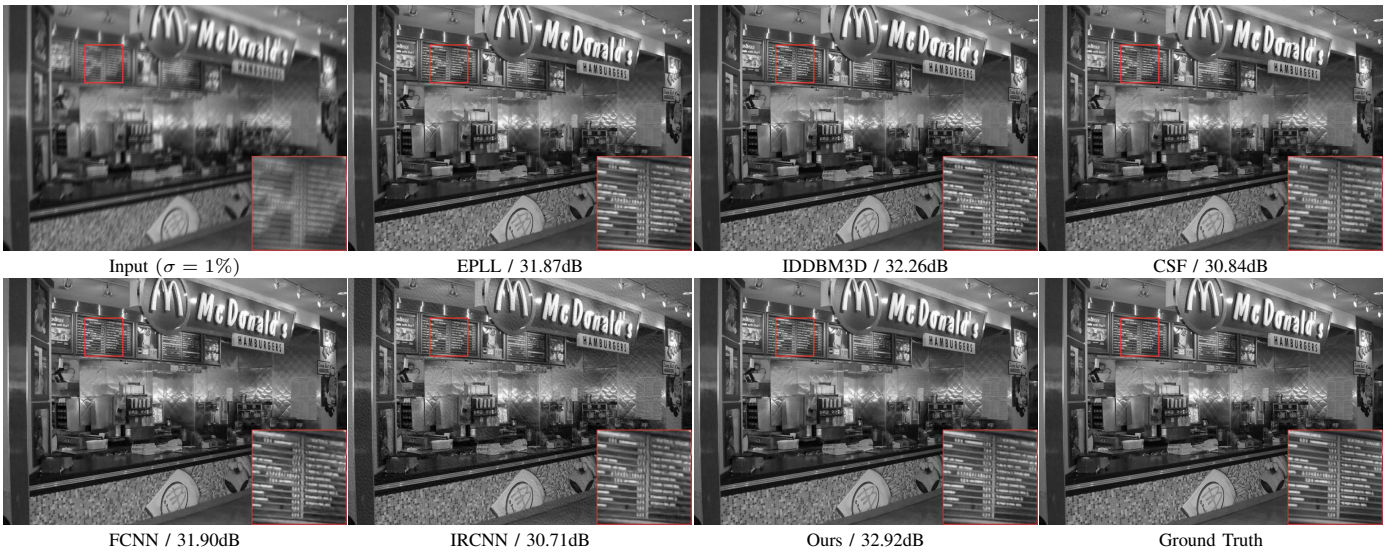


Fig. 3: Visual comparison of noise-nonblind deblurring results on one image of Sun *et al*.'s dataset in the presence of AWGN.

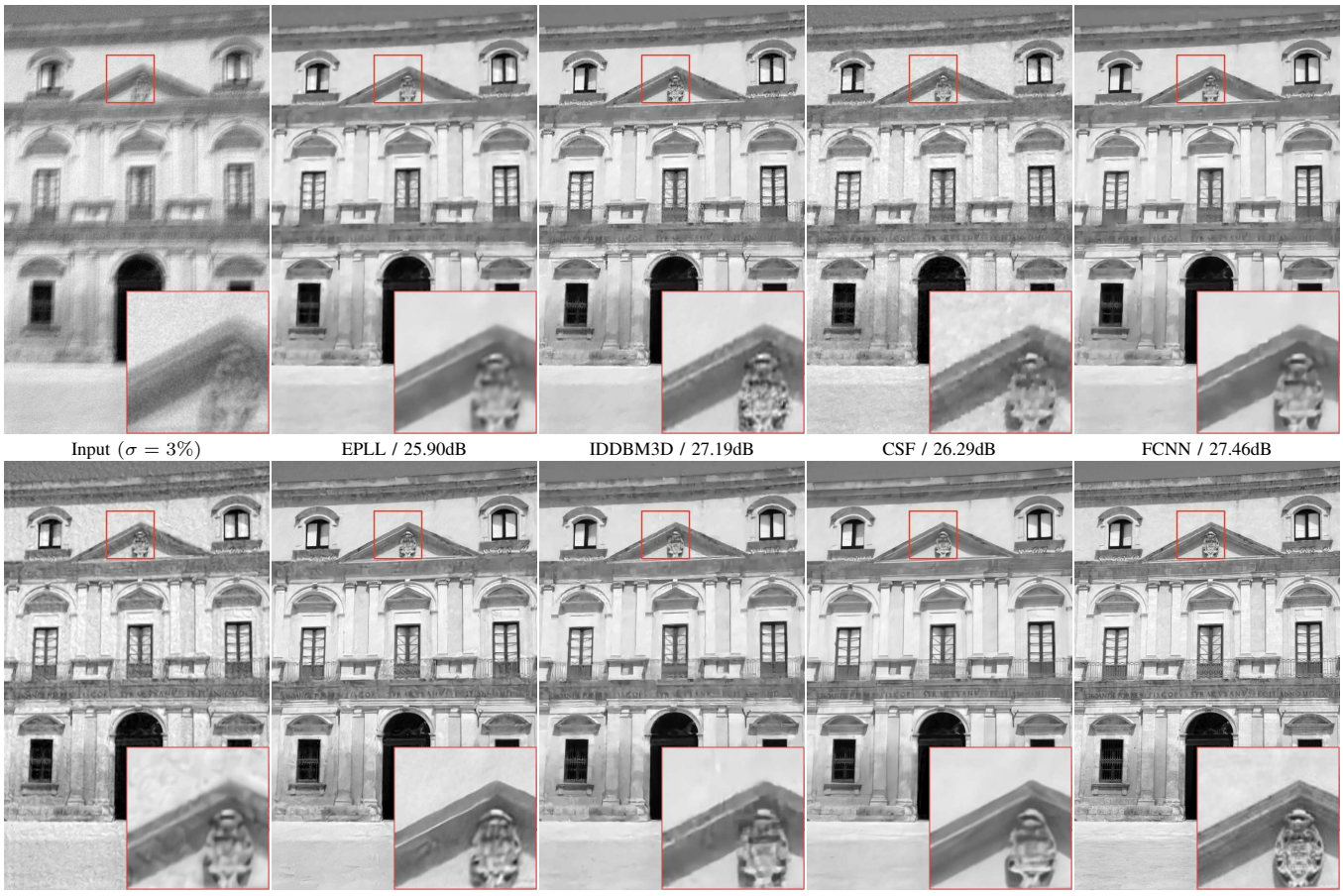


Fig. 4: Visual comparison of noise-nonblind deblurring results on one image of Sun *et al.*'s dataset in the presence of AWGN

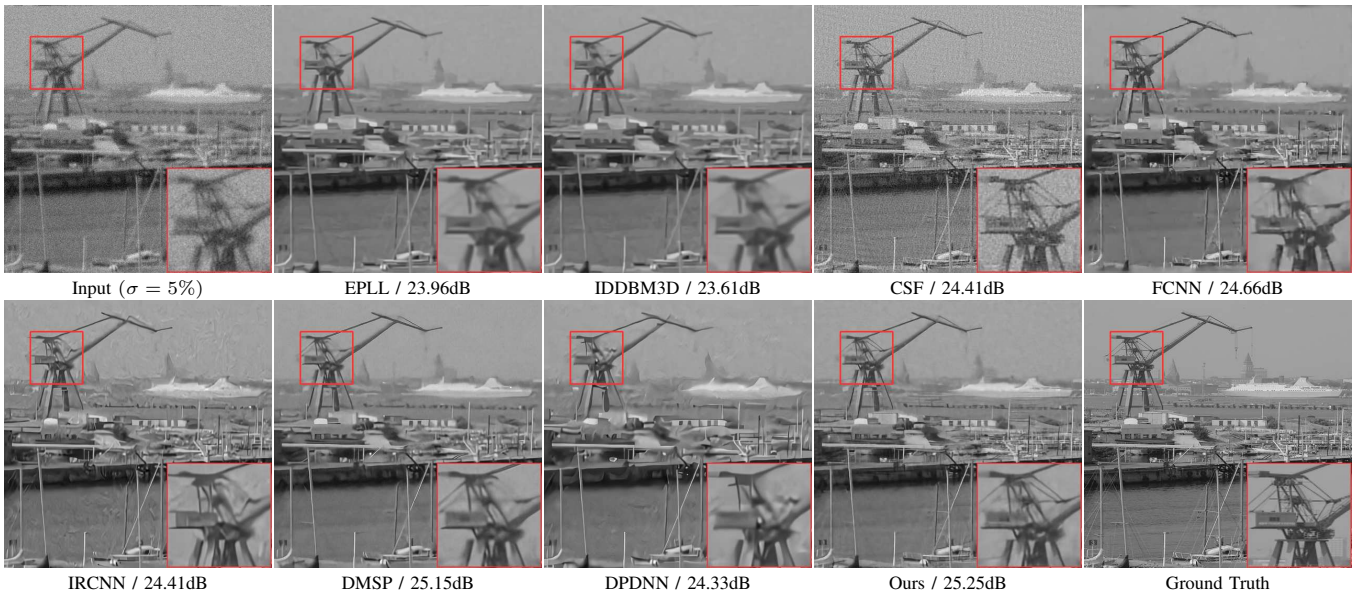


Fig. 5: Visual comparison of noise-nonblind deblurring results on image 'Harbour' in the presence of AWGN

III. Visual comparison of deblurring in the presence of AWGN with unknown noise strength

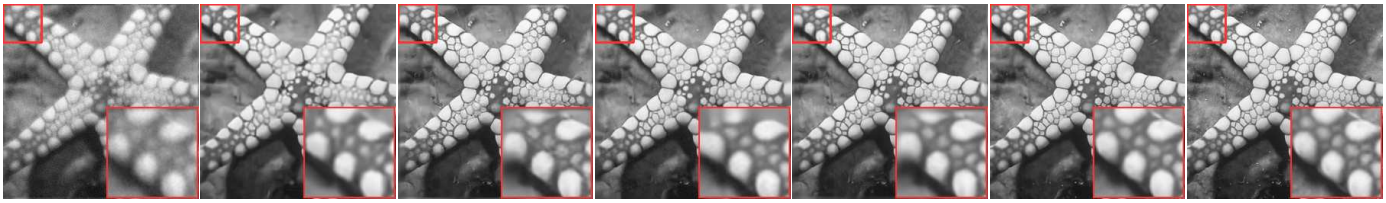
Input ($\sigma = 1\%$) IDDBM3D / 26.74dB FDN / 25.48dB DMSP / 28.51dB VEM / 28.35dB Ours / 28.70dB Ground Truth

Fig. 6: Visual comparison of noise-blind deblurring results on image 'Bridge' in the presence of AWGN.

Input ($\sigma = 1\%$) IDDBM3D / 31.07dB FDN / 29.64dB DMSP / 31.89dB

RGDN / 31.89dB VEM / 32.25dB Ours / 33.56dB Ground Truth

Fig. 7: Visual comparison of noise-nonblind deblurring results on one image of Sun *et al.*'s dataset in the presence of AWGN



Input ($\sigma = 2\%$) IDDBM3D / 27.68dB FDN / 27.08dB DMSP / 31.34dB VEM / 32.92dB Ours / 33.41dB Ground Truth

Fig. 8: Visual comparison of noise-blind deblurring results on image 'Starfish' in the presence of AWGN.

Input ($\sigma = 4\%$) IDDBM3D / 26.74dB FDN / 27.16dB DMSP / 27.90dB VEM / 28.29dB Ours / 28.65dB Ground Truth

Fig. 9: Visual comparison of noise-blind deblurring results on one image of Levin *et al.*'s dataset in the presence of AWGN

IV. Visual comparison of deblurring in the presence of Poisson noise

Fig. 10: Visual comparison of deblurring results on image 'Cameraman' in the presence of Poisson noise

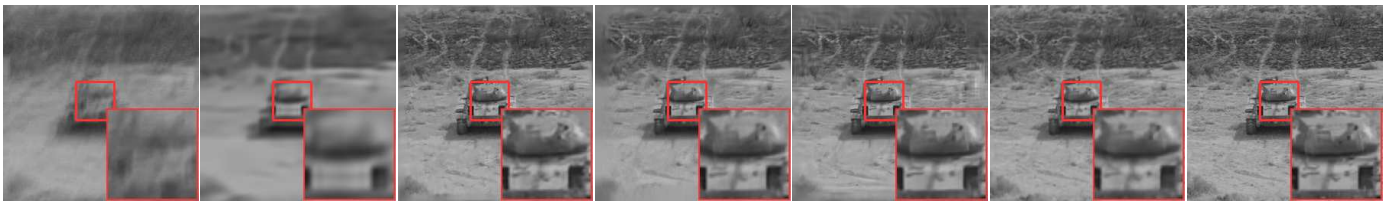


Fig. 11: Visual comparison of deblurring results on image 'Tank' in the presence of Poisson noise

V. Visual comparison of deblurring in the presence of kernel uncertainty

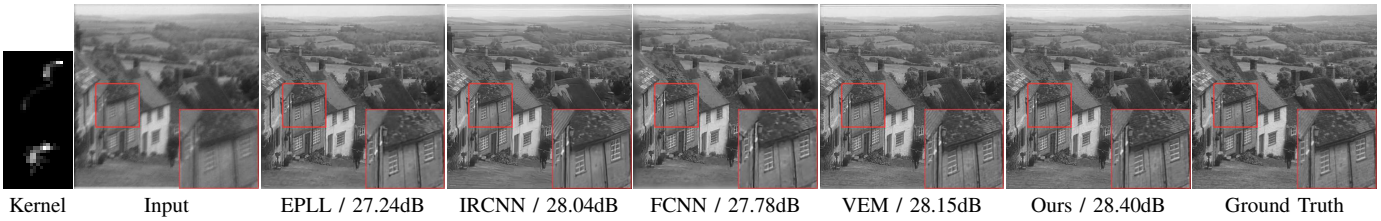


Fig. 12: Visual comparison of deblurring results on image 'Goldhill' in the presence of kernel error. The first column contains ground truth kernel (top) and estimated kernel from Pan *et al*.(bottom).

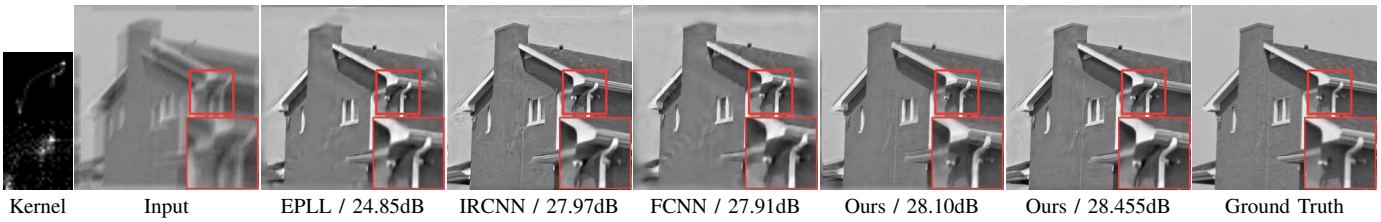


Fig. 13: Visual comparison of deblurring results on image 'House' in the presence of kernel error. The first column contains ground truth kernel (top) and estimated kernel from Perrone and Favaro (bottom).

VI. Visual inspection of the cases that challenge our method

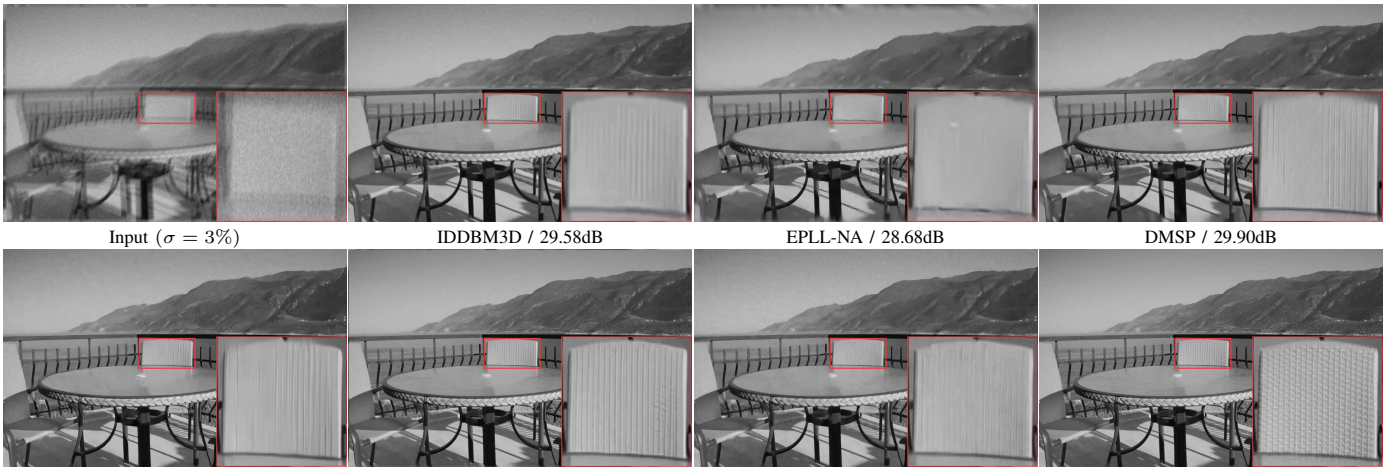


Fig. 14: Illustration of a less-successful result from the proposed method and the visual comparison to other methods in the presence of AWGN.

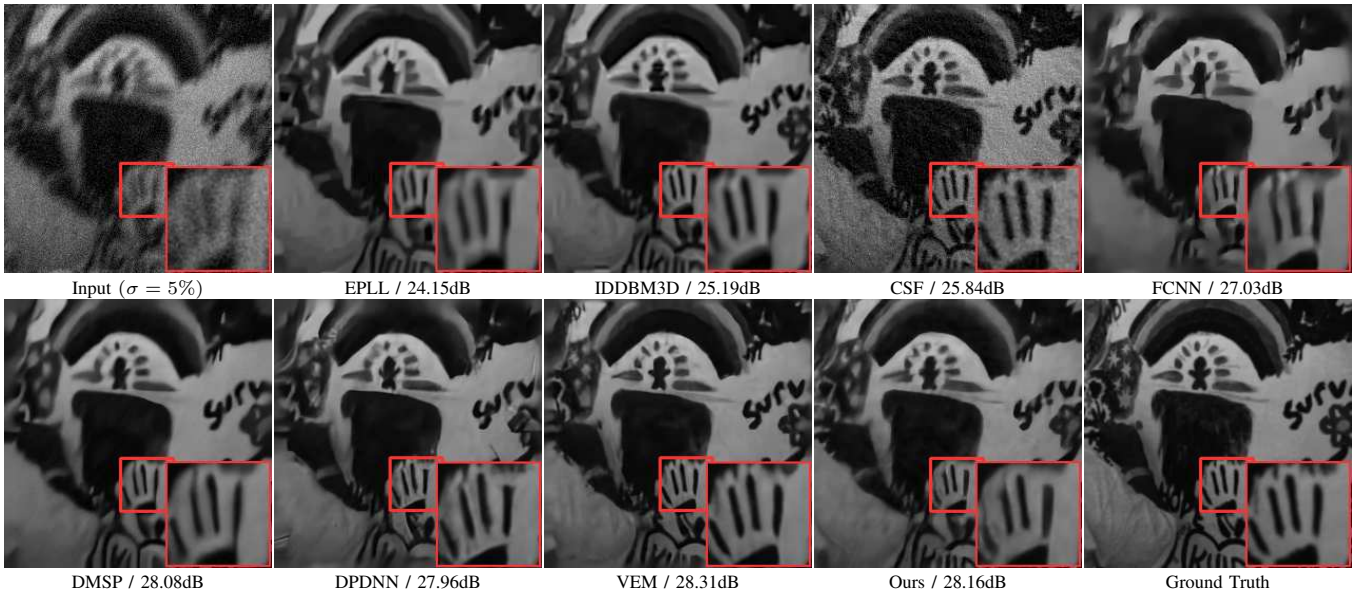


Fig. 15: Illustration of a less-successful result from the proposed method and the visual comparison to other methods in the presence of AWGN.

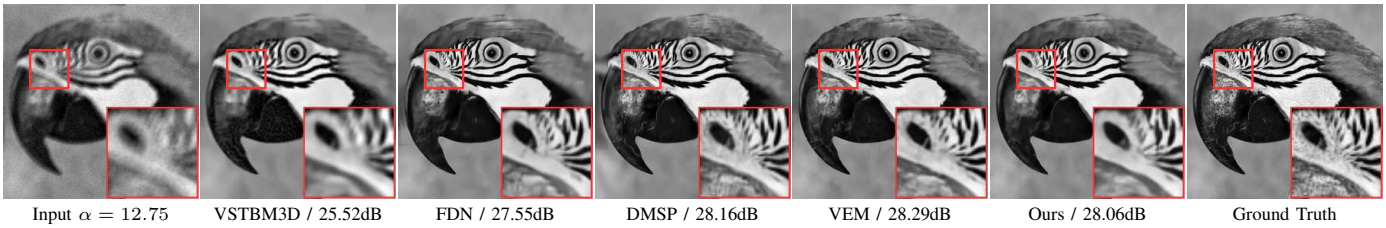


Fig. 16: Illustration of a less-successful result from the proposed method and the visual comparison to other methods in the presence of Poisson noise.