Blur Kernel Estimation using Normalized Color-Line Priors

Supplementary Material

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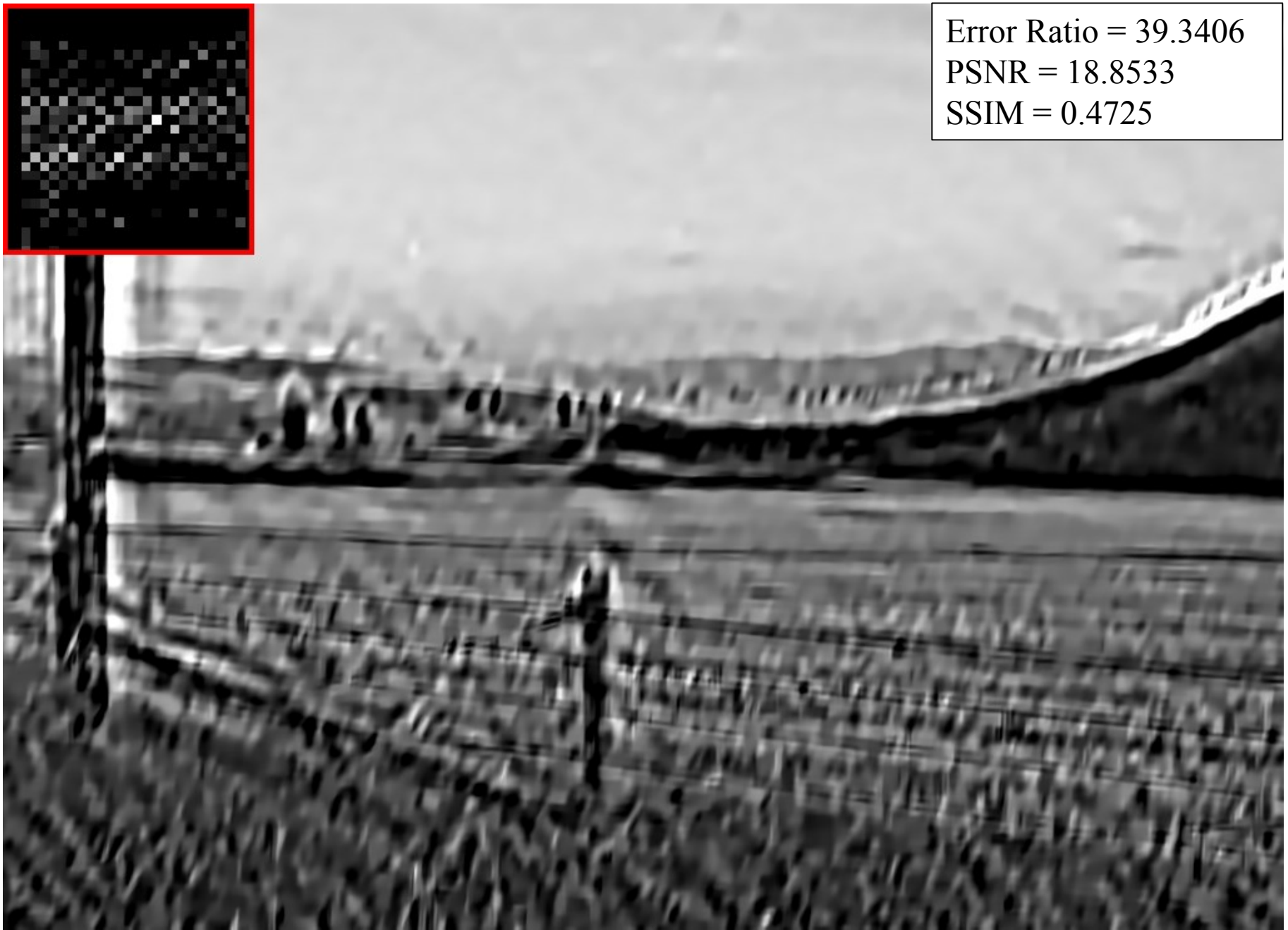
Quantitative Experiment on Sun *et al.*'s synthetic dataset

- 80 images, 8 blur kernels, 1% Gaussian noise
- Zoran and Weiss's method is used as the final non-blind deconvolution method to restore latent images.
- We compare deblurred results using the ground truth kernel, estimated kernels from [Cho & Lee], [Xu & Jia], [Levin *et al.*], [Krishnan *et al.*], [Sun *et al.*], [Michaeli & Irani], and our method.

Blurred Input (1% noise) and the ground truth kernel

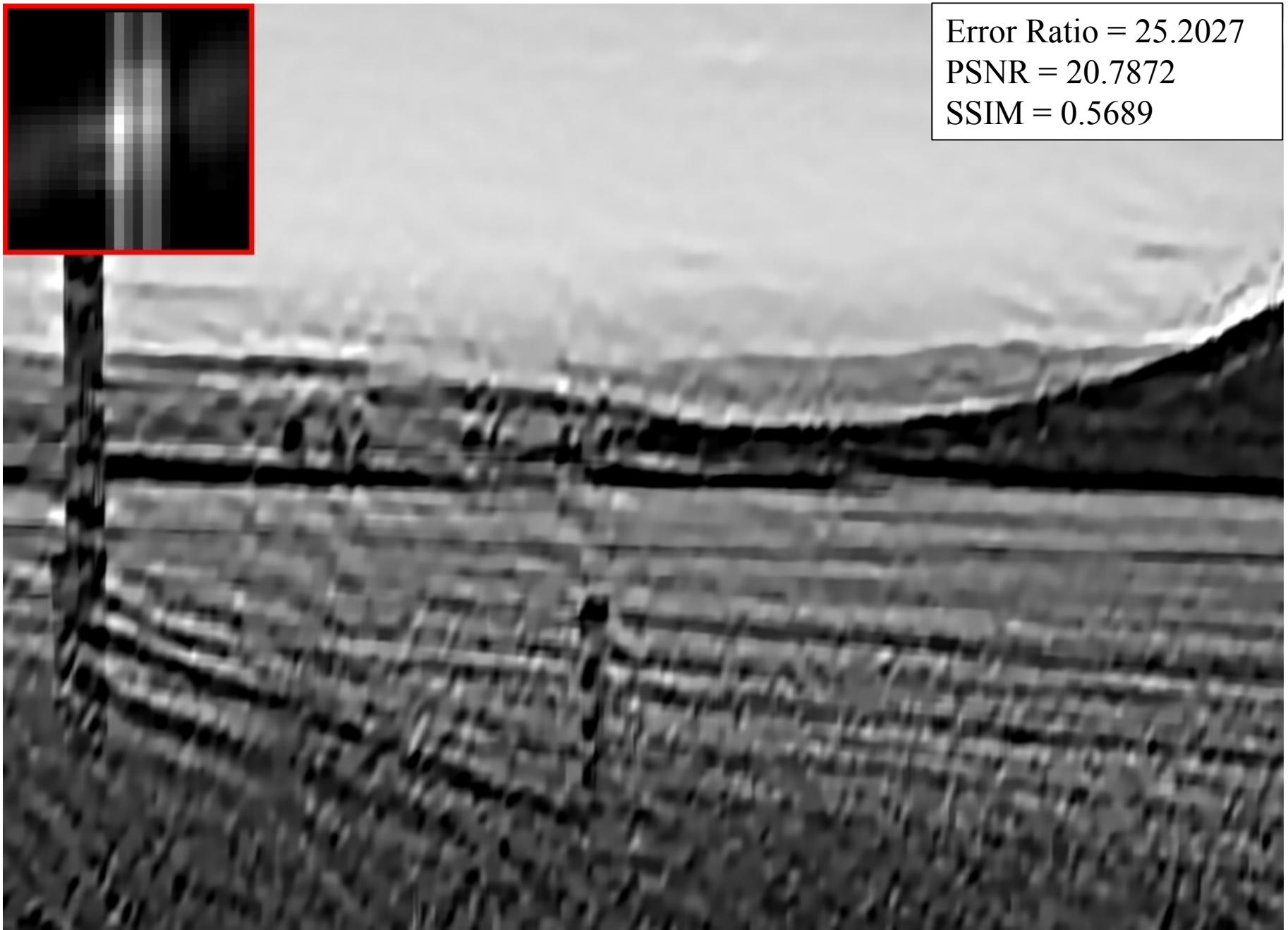
Cho & Lee (+ Zoran & Weiss)



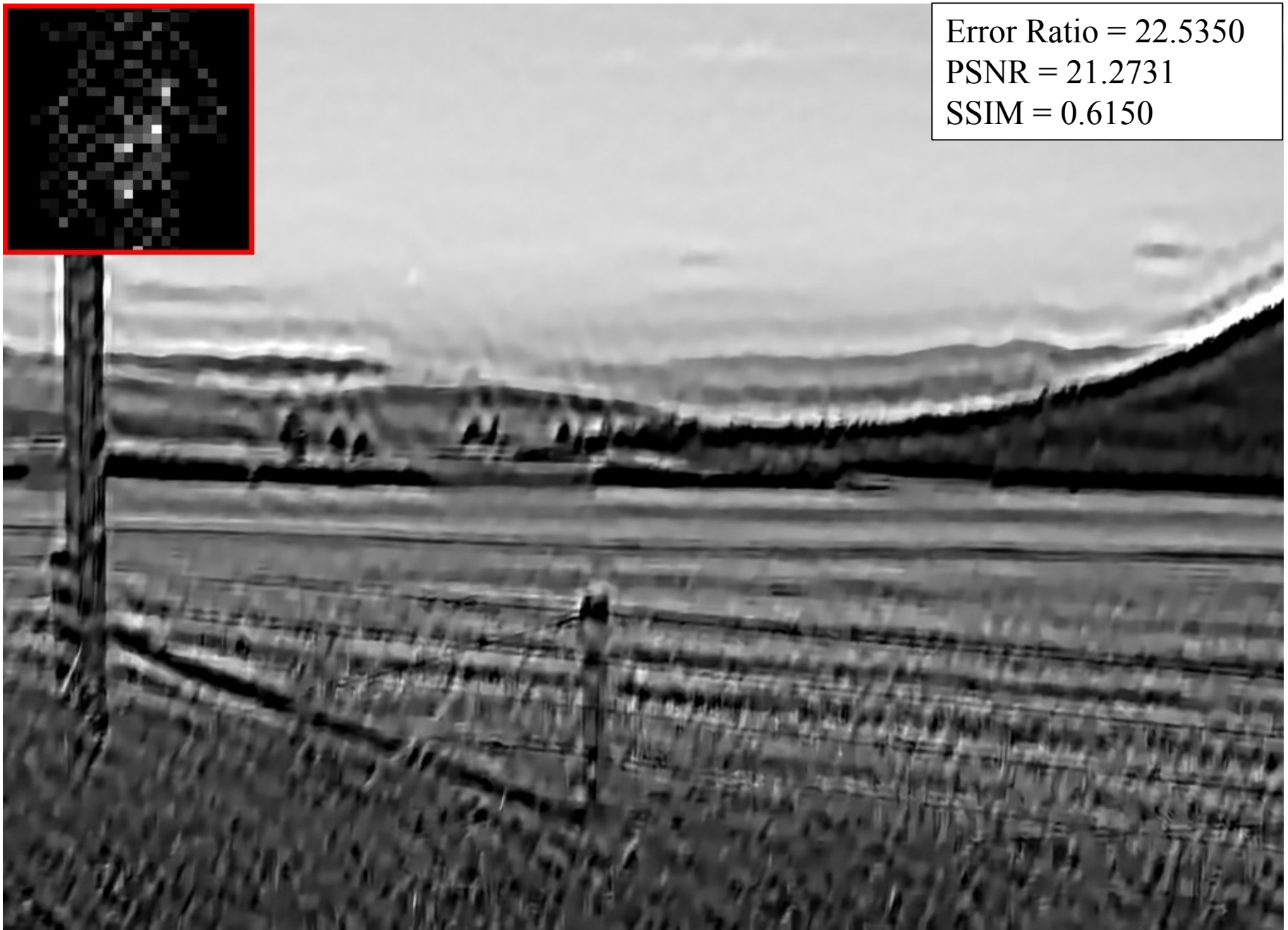
Xu & Jia (+ Zoran & Weiss)

Levin *et al.* (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)



Sun *et al.* (+ Zoran & Weiss)

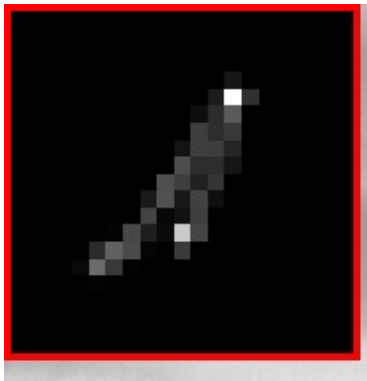


Michaeli & Irani (+ Zoran & Weiss)

Our (+ Zoran & Weiss)

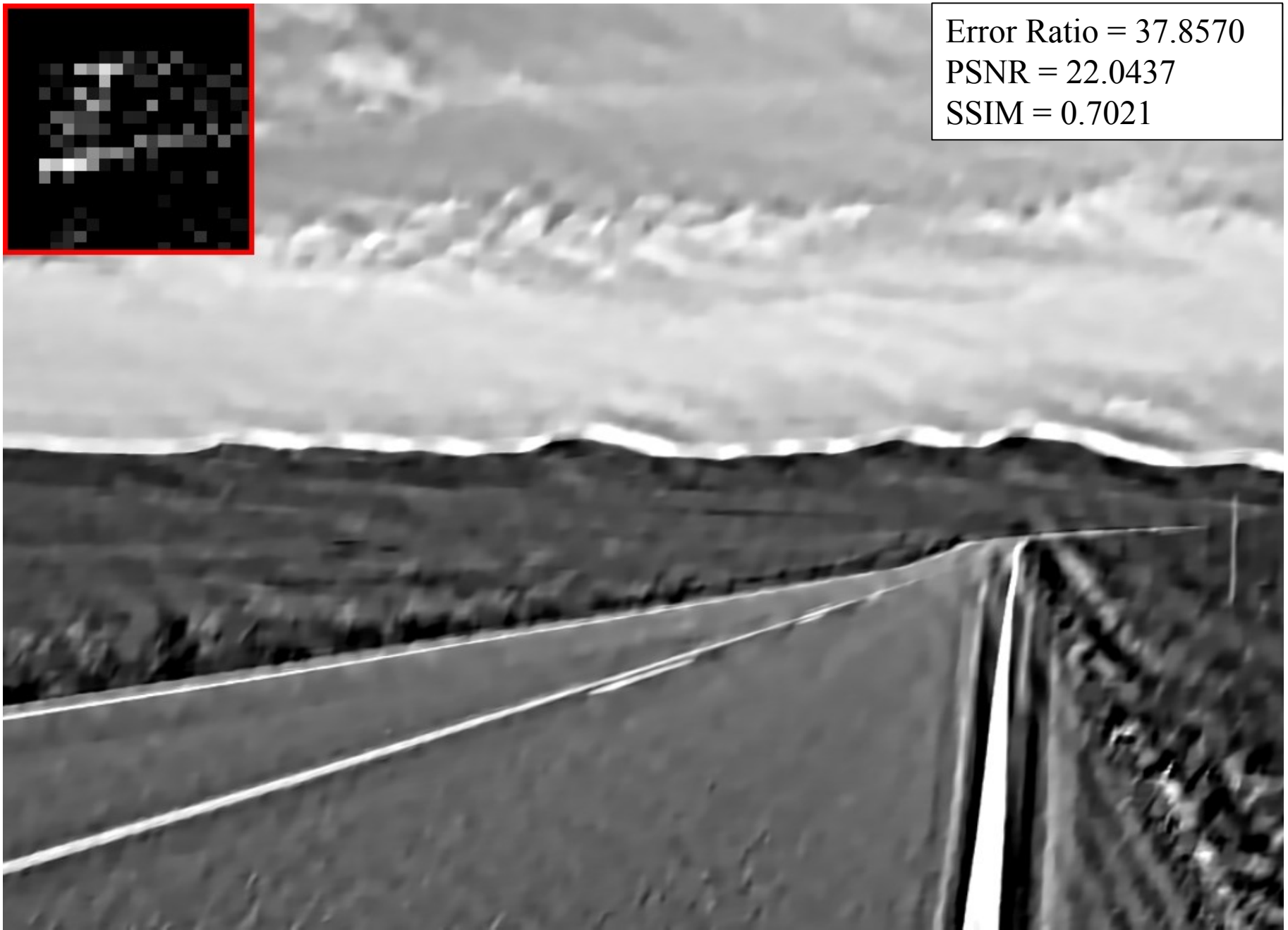
The ground truth kernel (+ Zoran & Weiss)

Blurred Input (1% noise) and the ground truth kernel



Error Ratio = 5.3914
PSNR = 30.5081
SSIM = 0.9199

Cho & Lee (+ Zoran & Weiss)



Xu & Jia (+ Zoran & Weiss)

Levin *et al.* (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

Sun *et al.* (+ Zoran & Weiss)

Error Ratio = 9.9046
PSNR = 27.8668
SSIM = 0.8946

Michaeli & Irani (+ Zoran & Weiss)

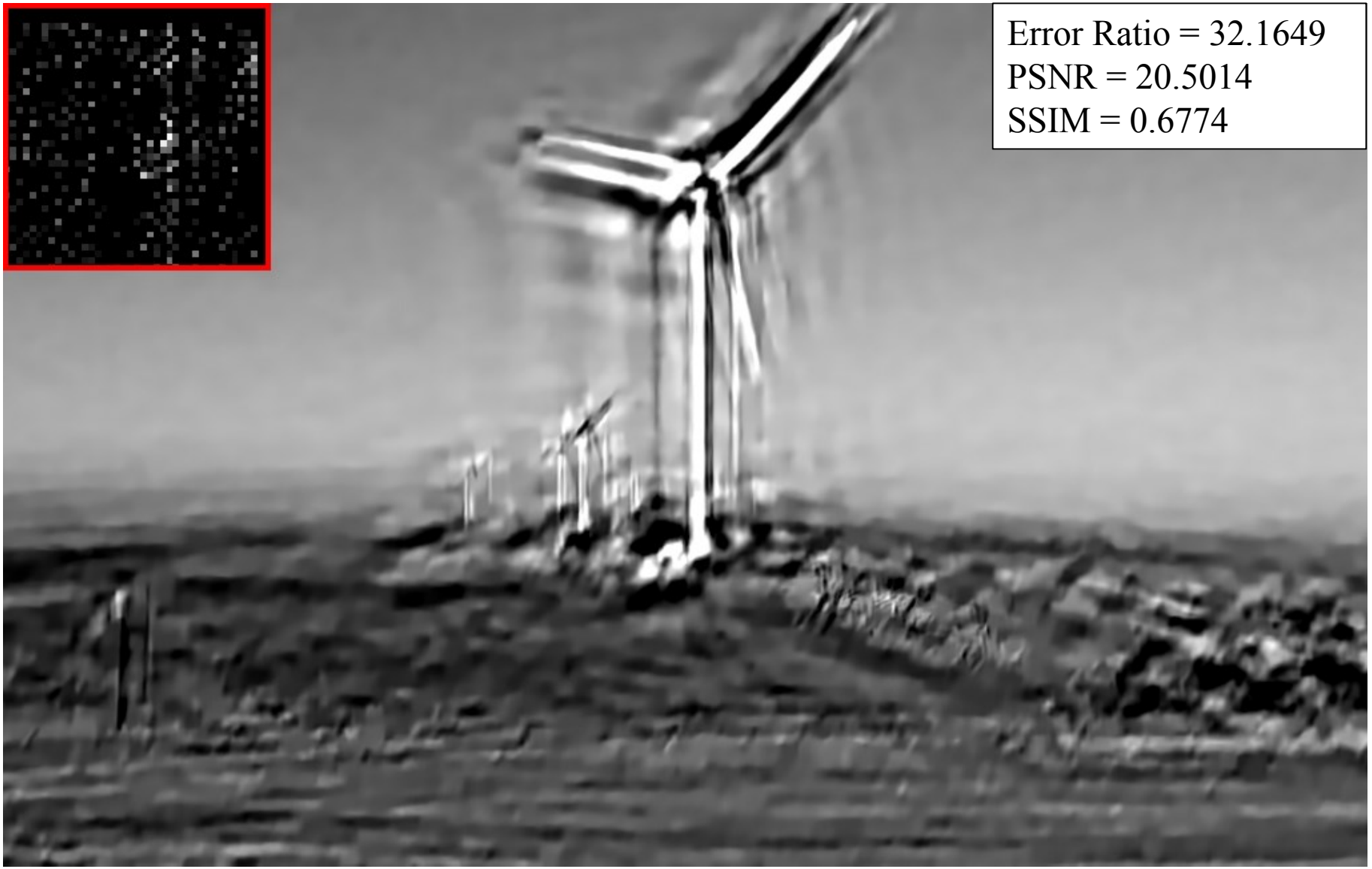
Our (+ Zoran & Weiss)

The ground truth kernel (+ Zoran & Weiss)

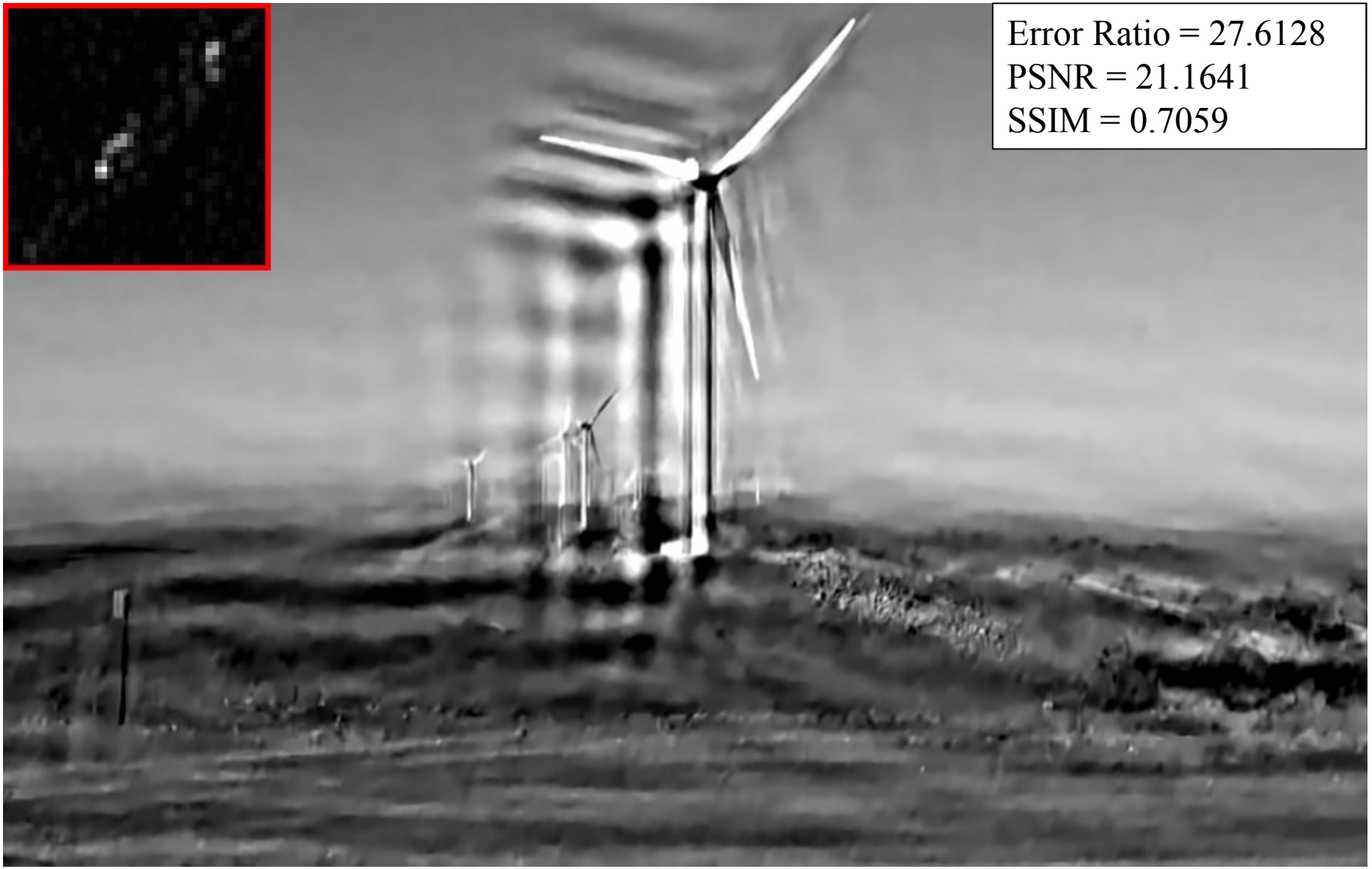
Error Ratio = 1.0000
PSNR = 37.8259
SSIM = 0.9532

Blurred Input (1% noise) and the ground truth kernel

Cho & Lee (+ Zoran & Weiss)



Xu & Jia (+ Zoran & Weiss)



Levin *et al.* (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

Sun *et al.* (+ Zoran & Weiss)

Michaeli & Irani (+ Zoran & Weiss)

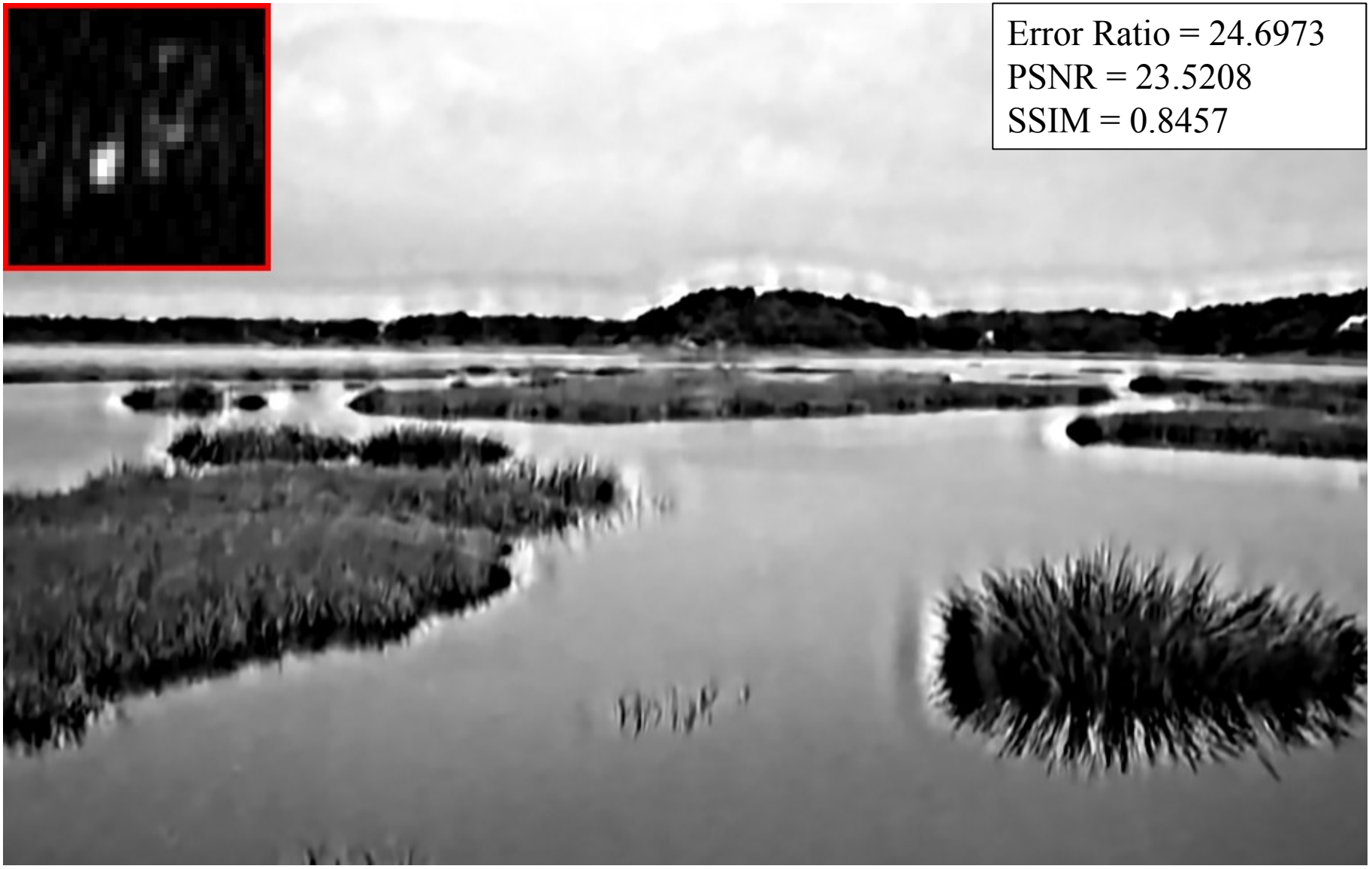
Our (+ Zoran & Weiss)

The ground truth kernel (+ Zoran & Weiss)

Blurred Input (1% noise) and the ground truth kernel

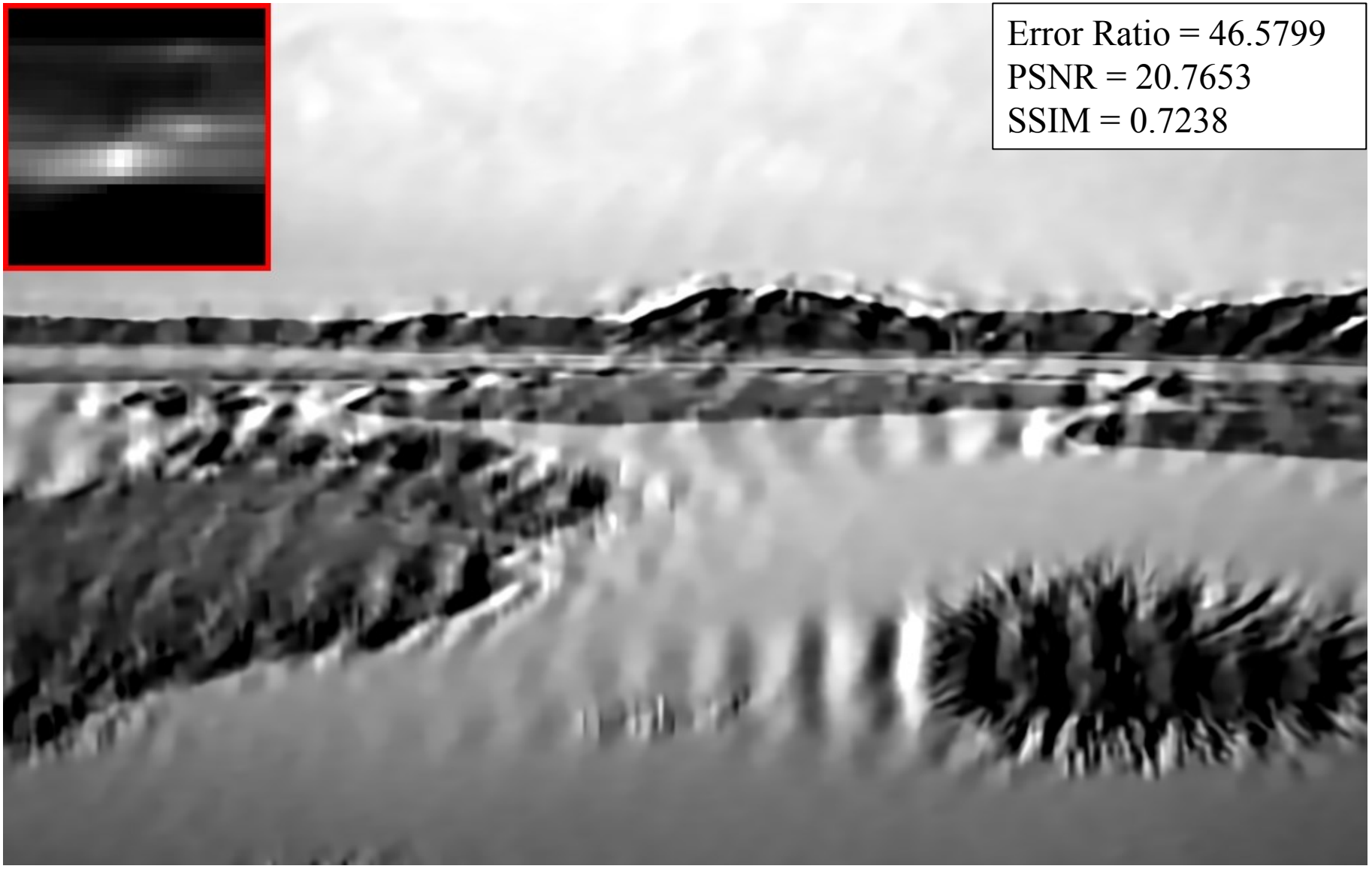
Cho & Lee (+ Zoran & Weiss)

Xu & Jia (+ Zoran & Weiss)



Levin *et al.* (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)



Sun *et al.* (+ Zoran & Weiss)

Michaeli & Irani (+ Zoran & Weiss)

Our (+ Zoran & Weiss)

The ground truth kernel (+ Zoran & Weiss)

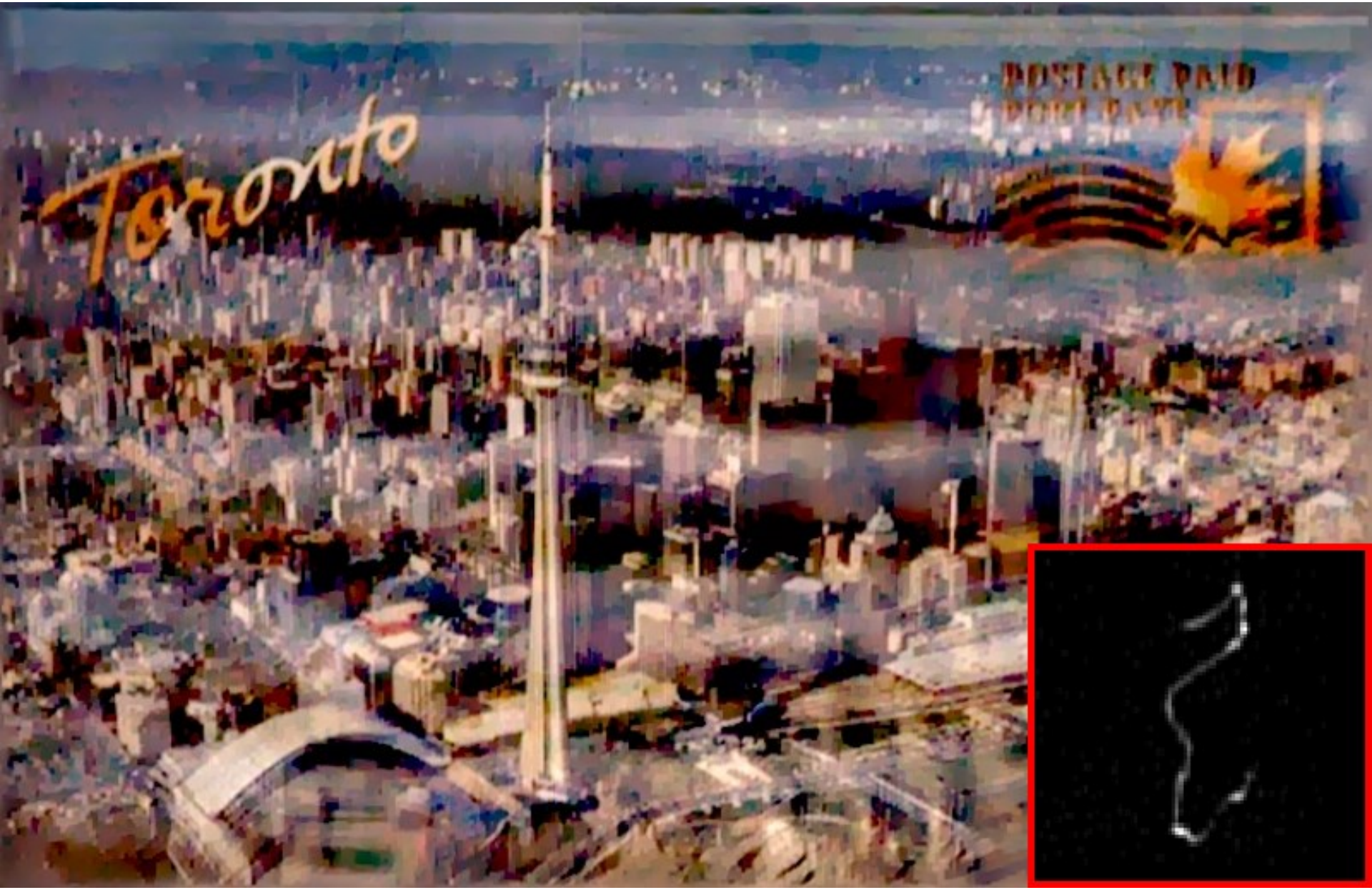
Comparison on Real-World Photos

- We compare deblurred results using Zoran & Weiss's non-blind deconvolution with the estimated kernels from [Cho & Lee], [Xu & Jia], [Krishnan *et al*.], [Levin *et al*.] [Sun *et al*.], [Michaeli & Irani], and our method.

- [Cho & Lee], [Xu & Jia], and [Michaeli & Irani] also estimate the latent images. For these methods, we show their deblurred images as well.

Blurred Input

Cho & Lee



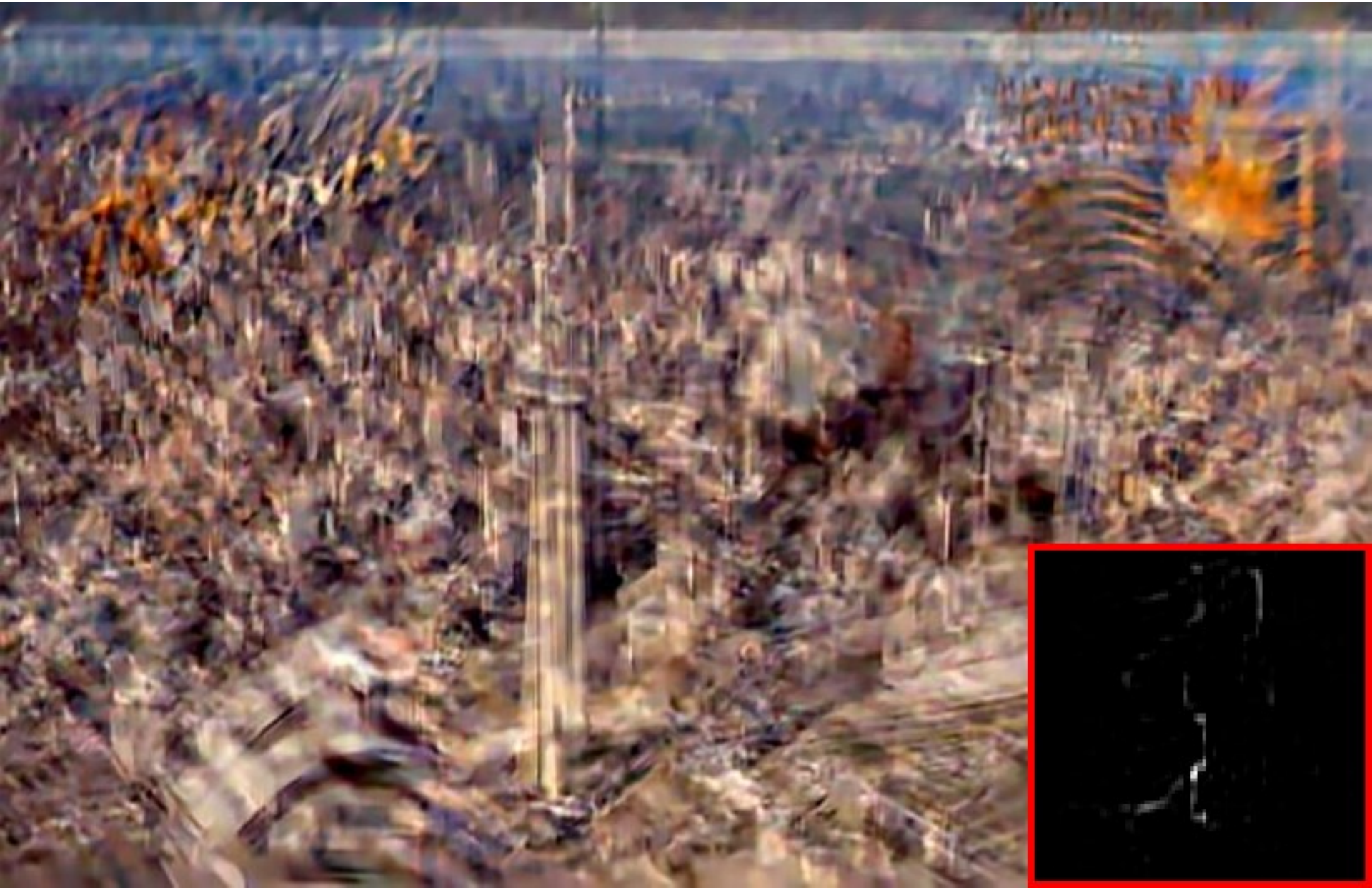
Cho & Lee (+ Zoran & Weiss)

Xu & Jia

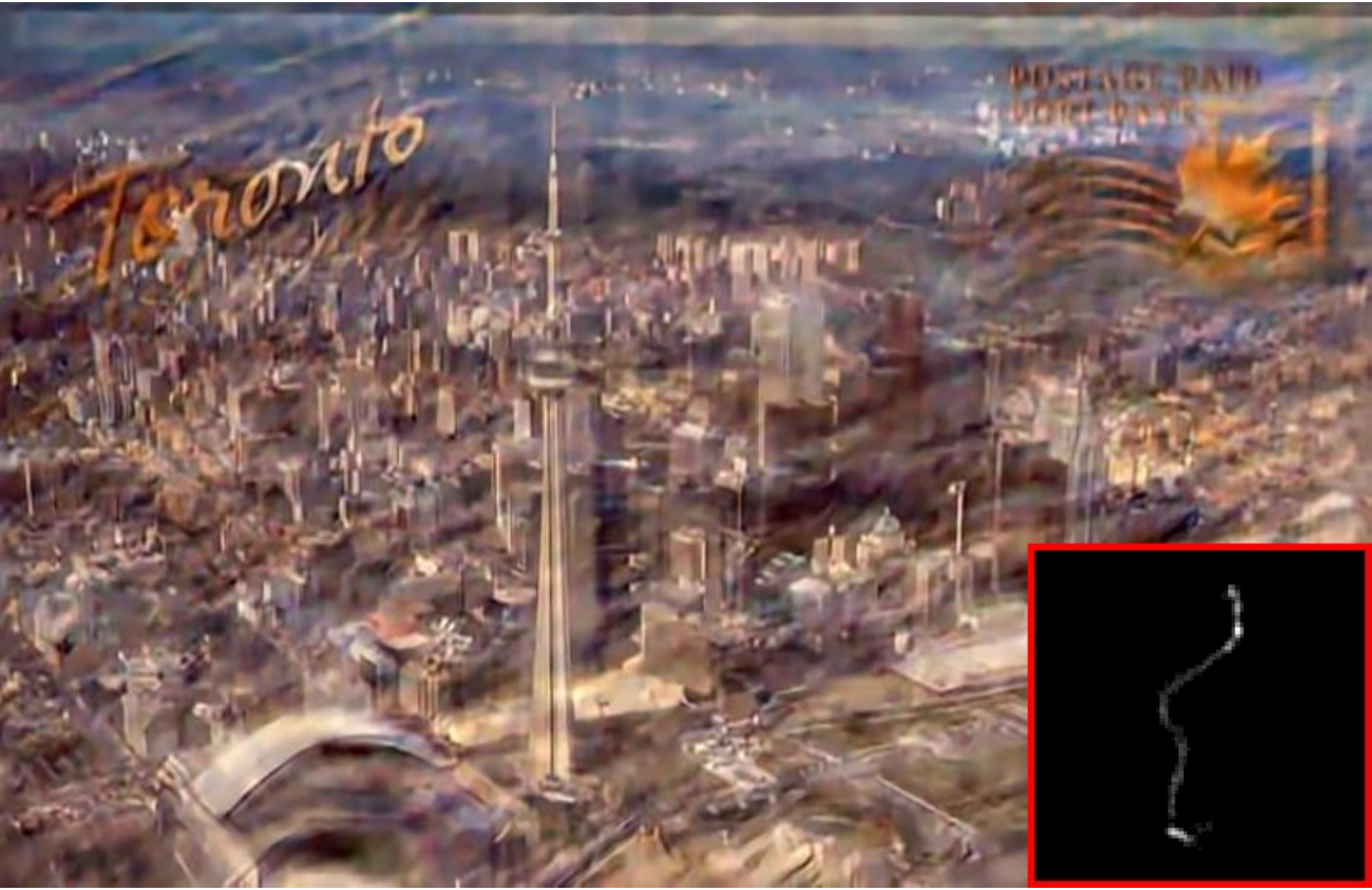
Xu & Jia (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

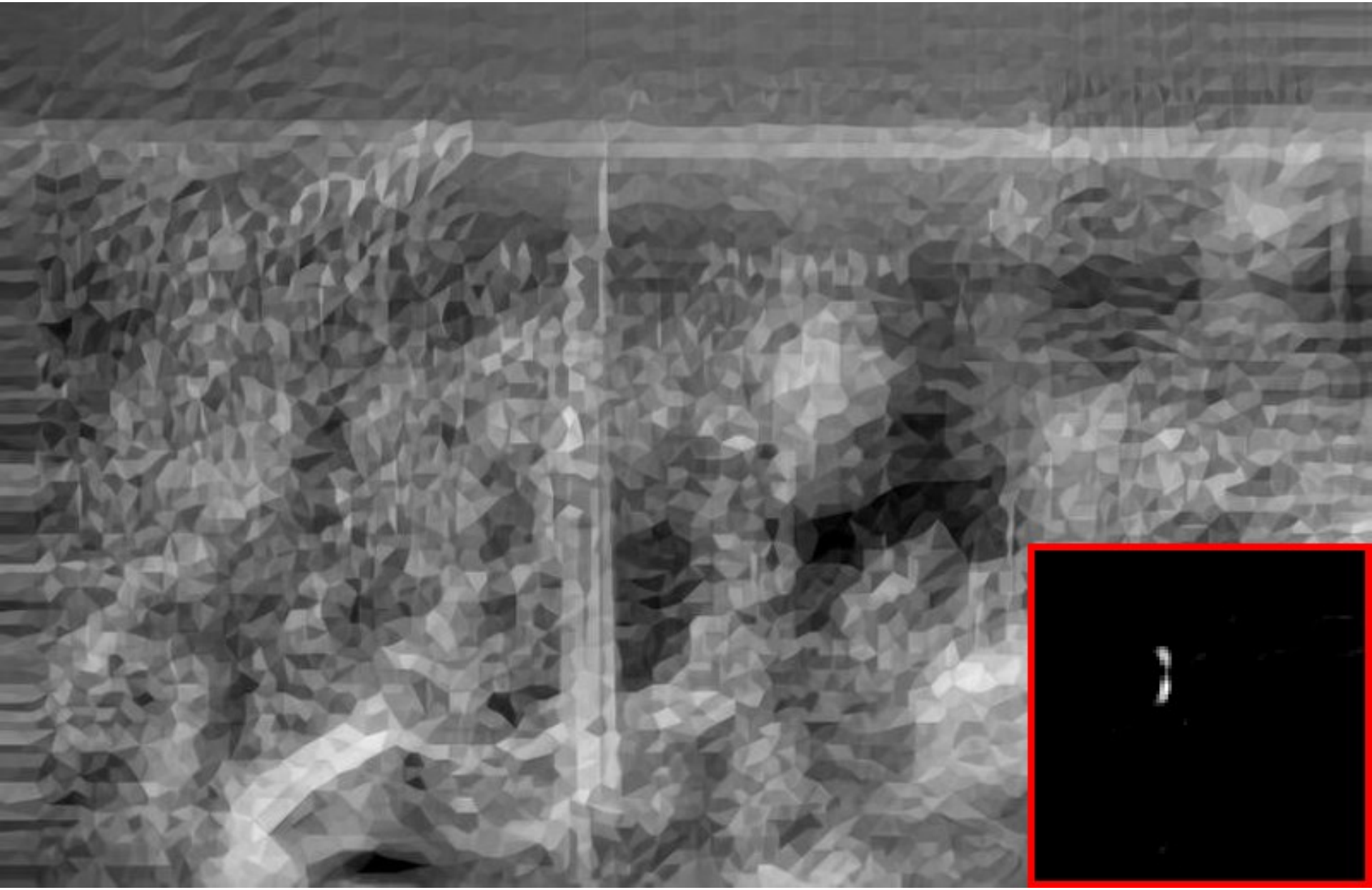
Levin *et al.* (+ Zoran & Weiss)



Sun *et al.* (+ Zoran & Weiss)



Michaeli & Irani

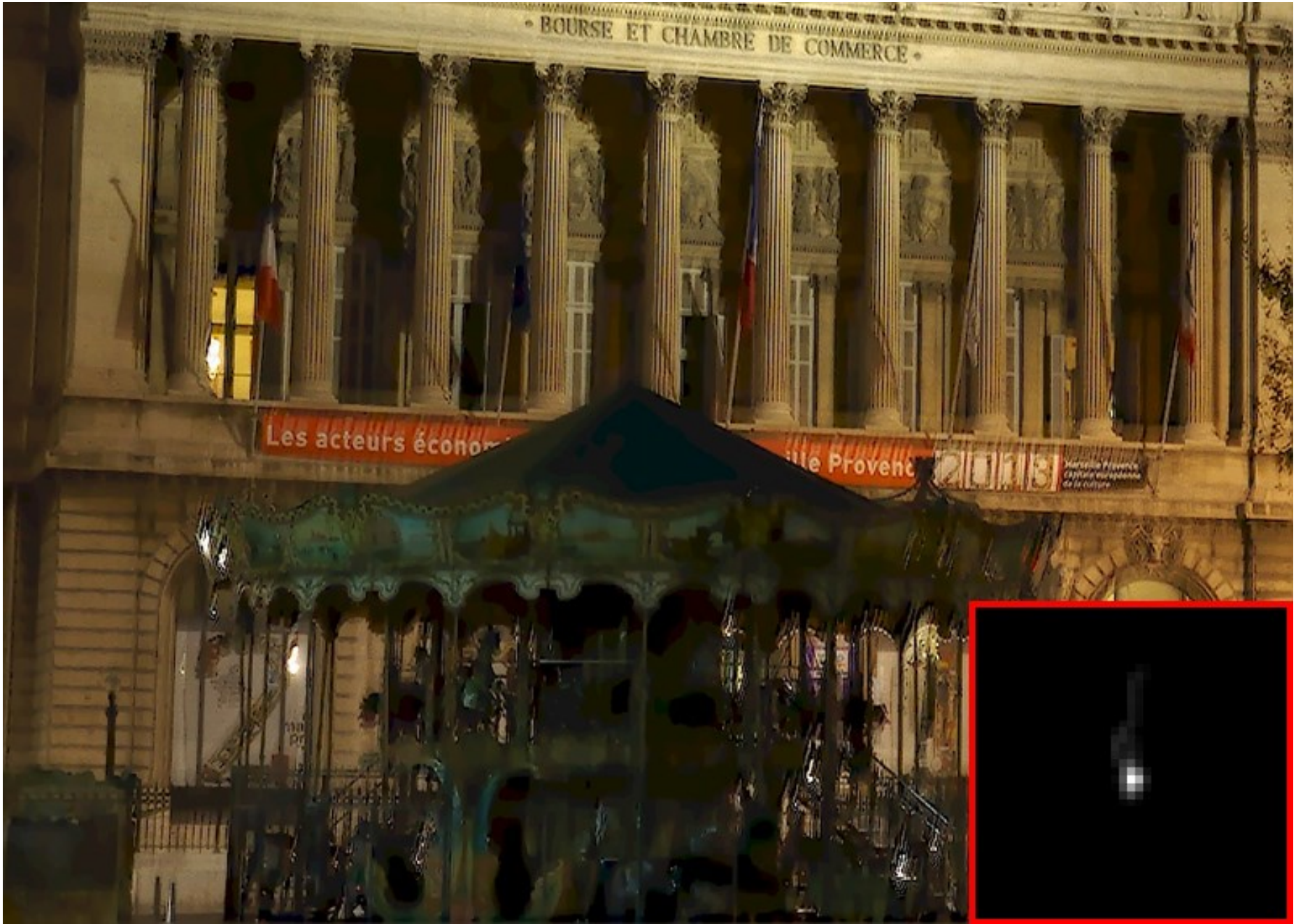


Michaeli & Irani (+ Zoran & Weiss)

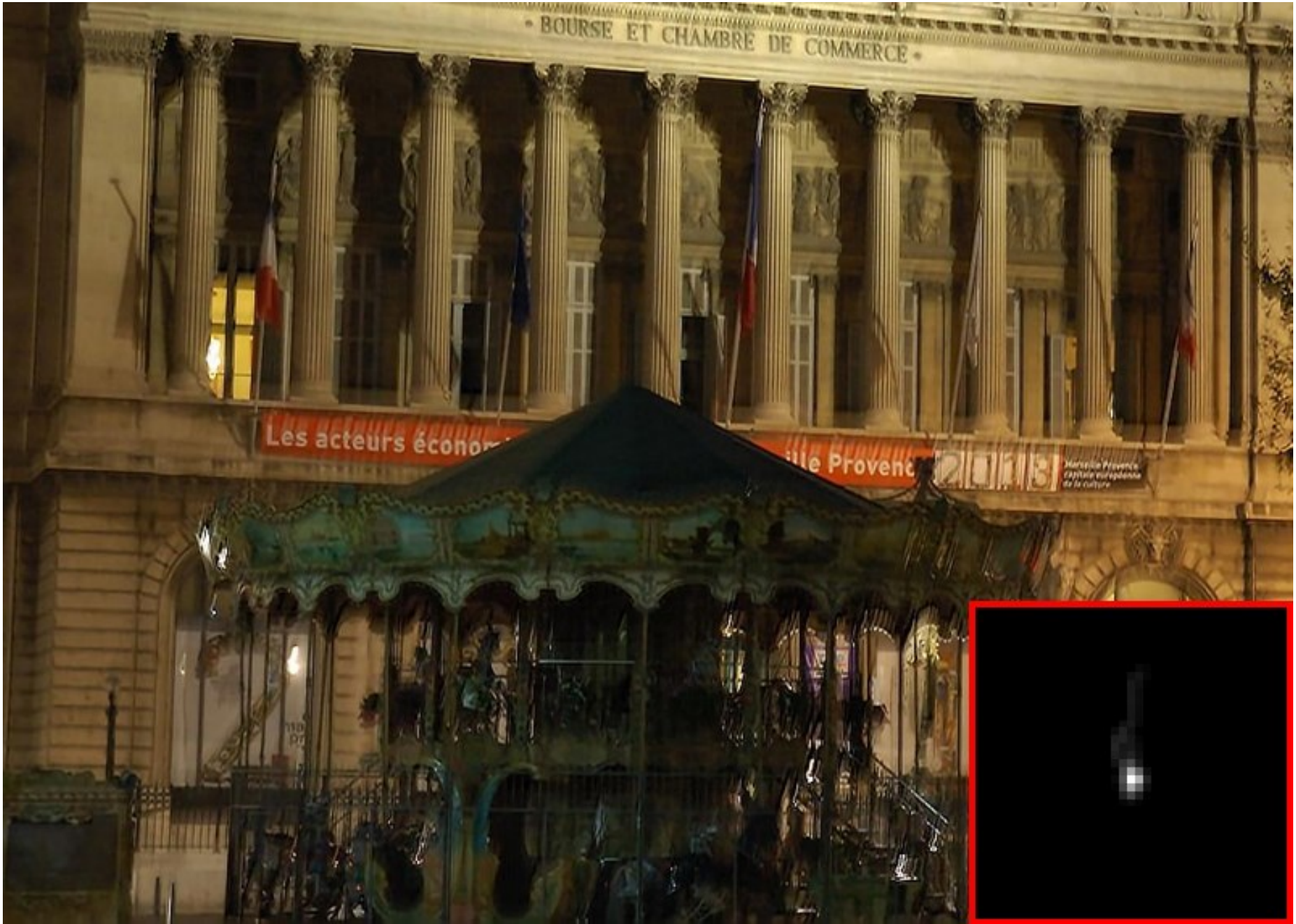
Our (+ Zoran & Weiss)

Blurred Input

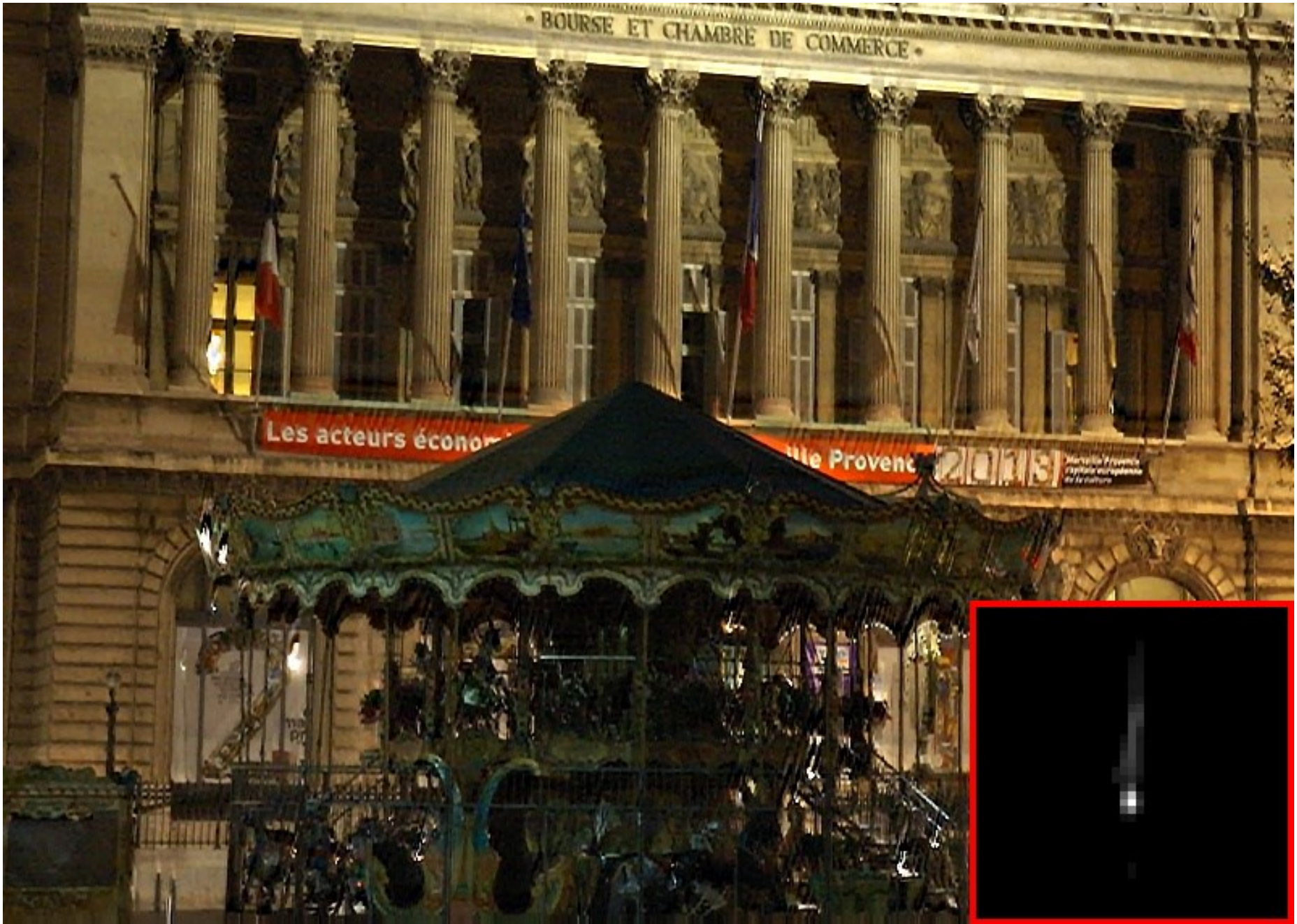
Cho & Lee



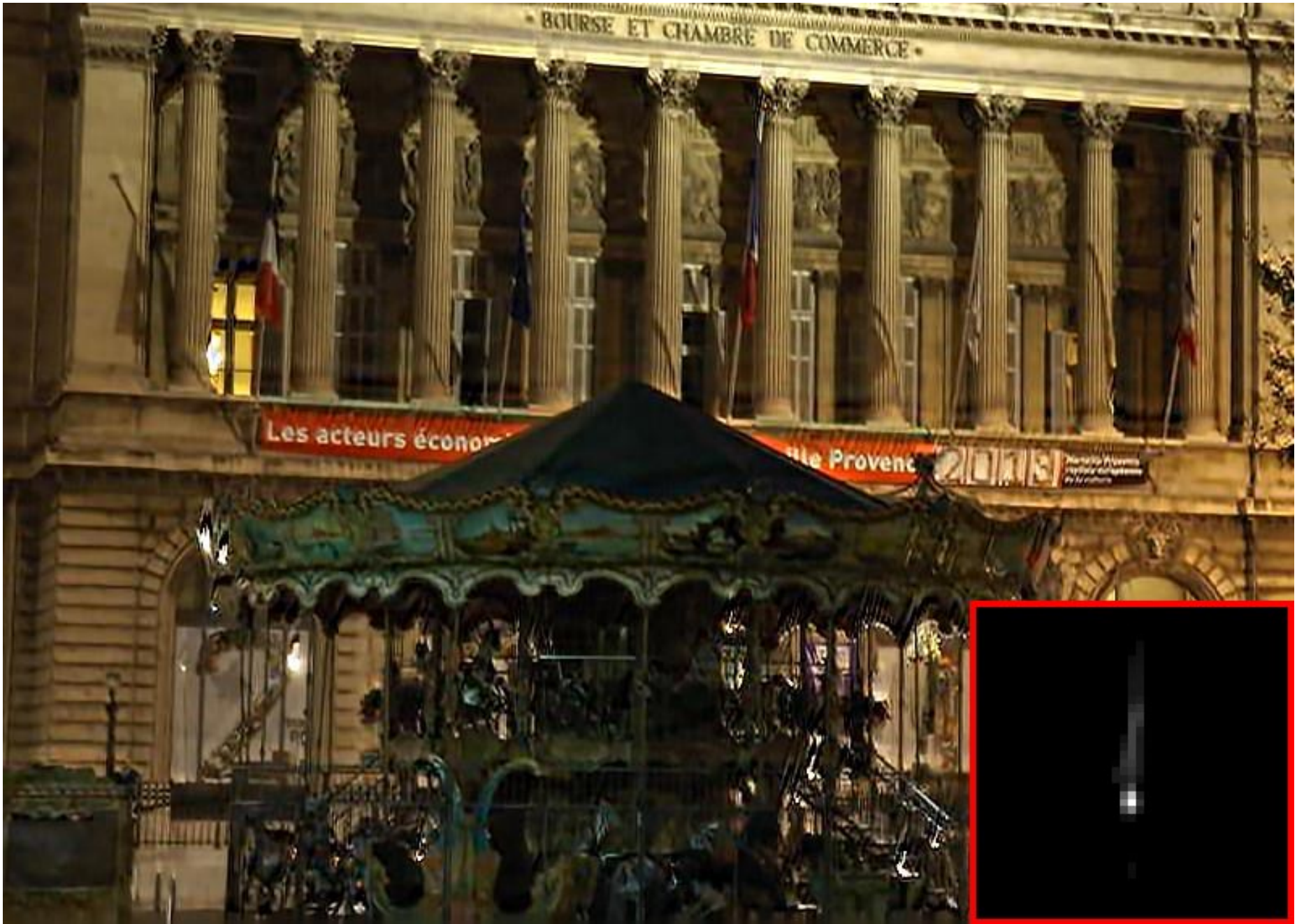
Cho & Lee (+ Zoran & Weiss)



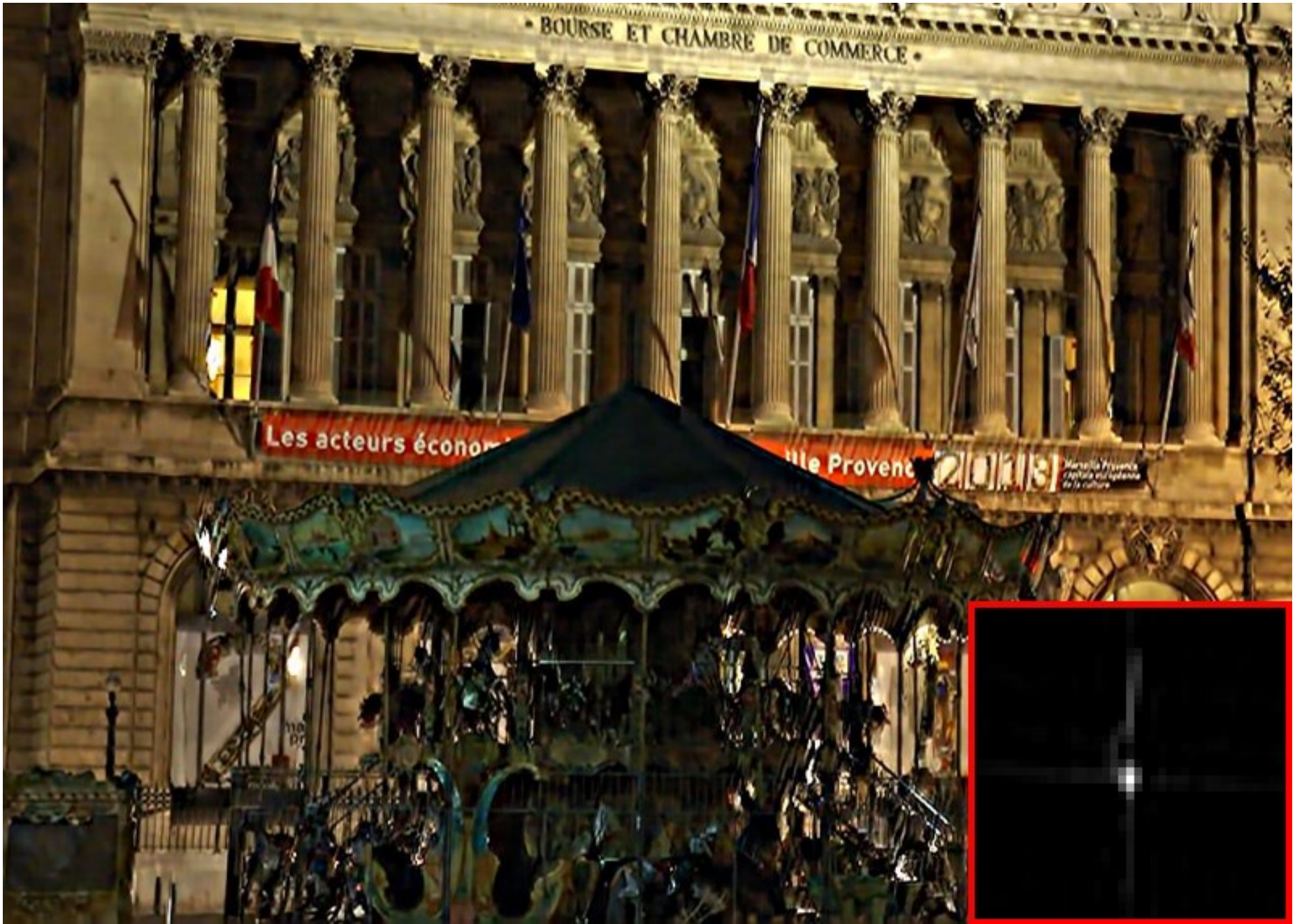
Xu & Jia



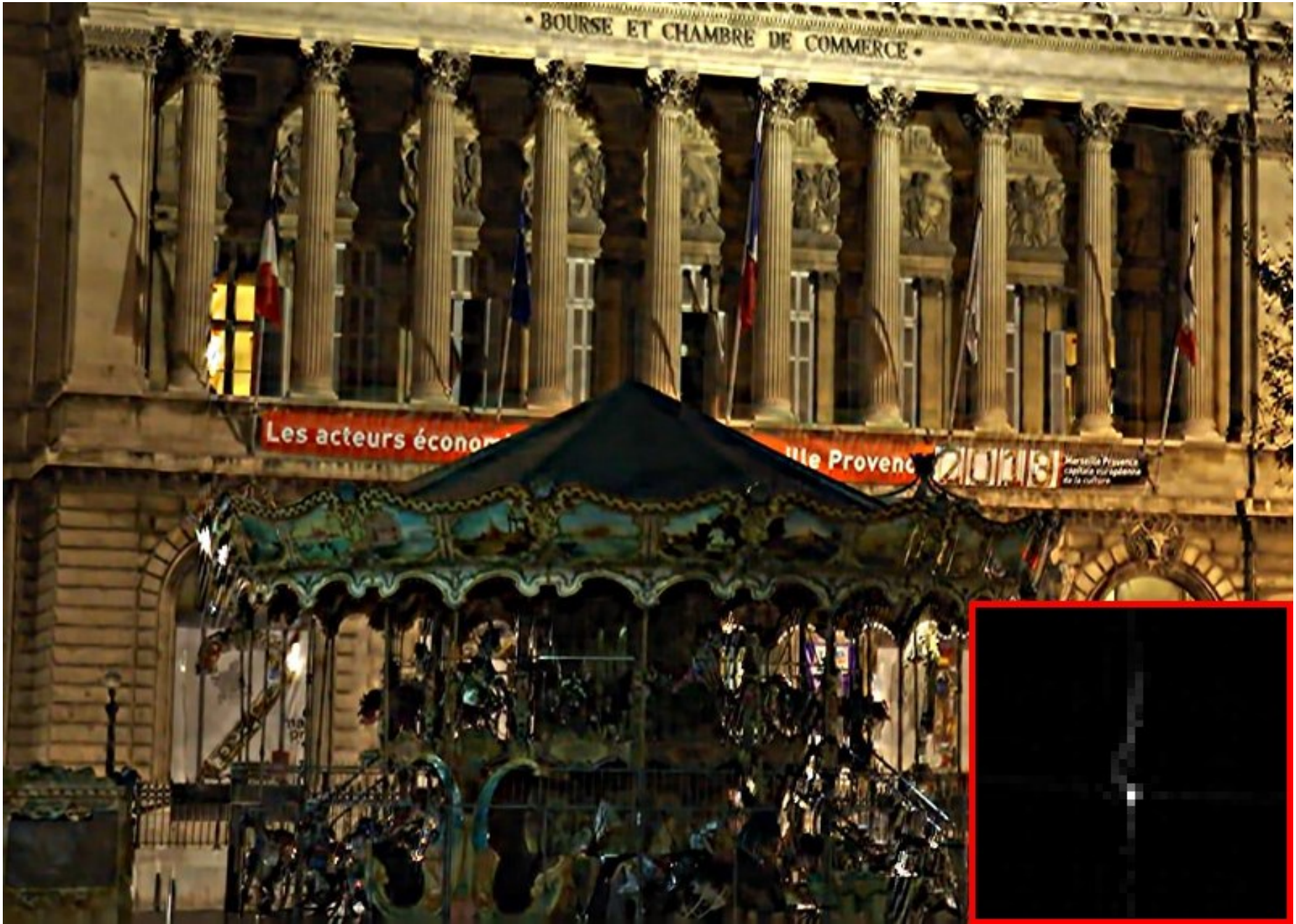
Xu & Jia (+ Zoran & Weiss)



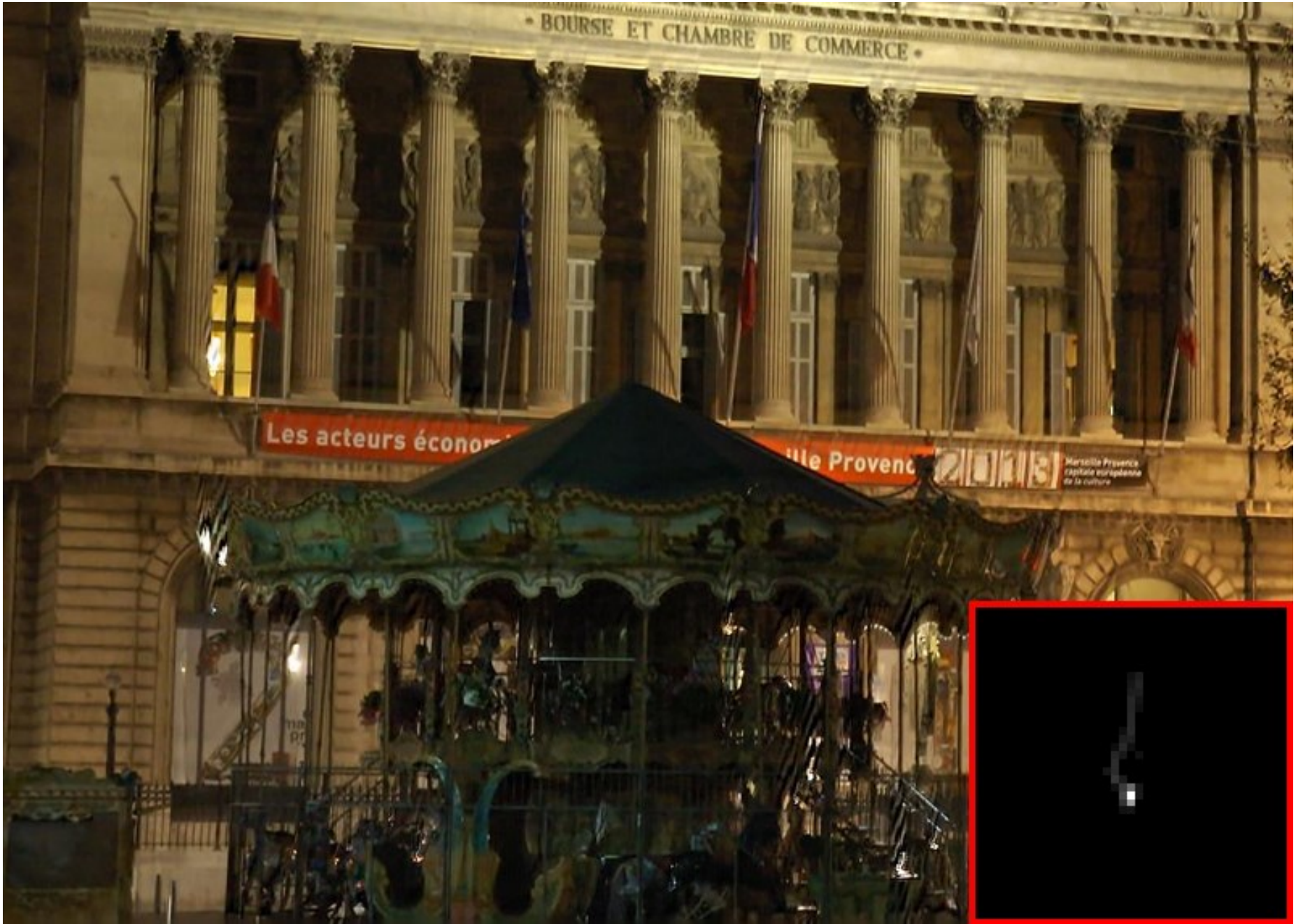
Krishnan *et al.* (+ Zoran & Weiss)



Levin *et al.* (+ Zoran & Weiss)

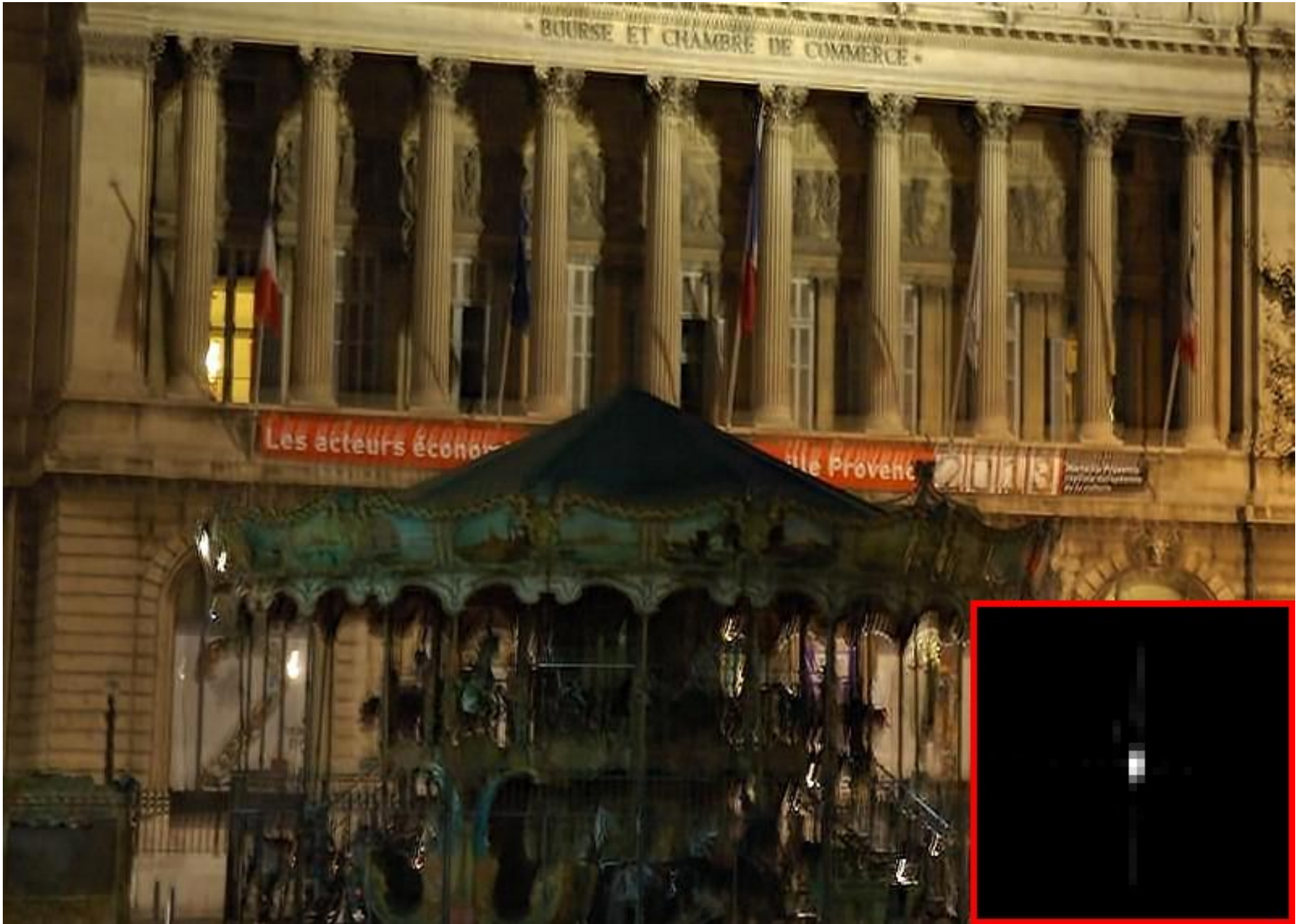


Sun *et al.* (+ Zoran & Weiss)

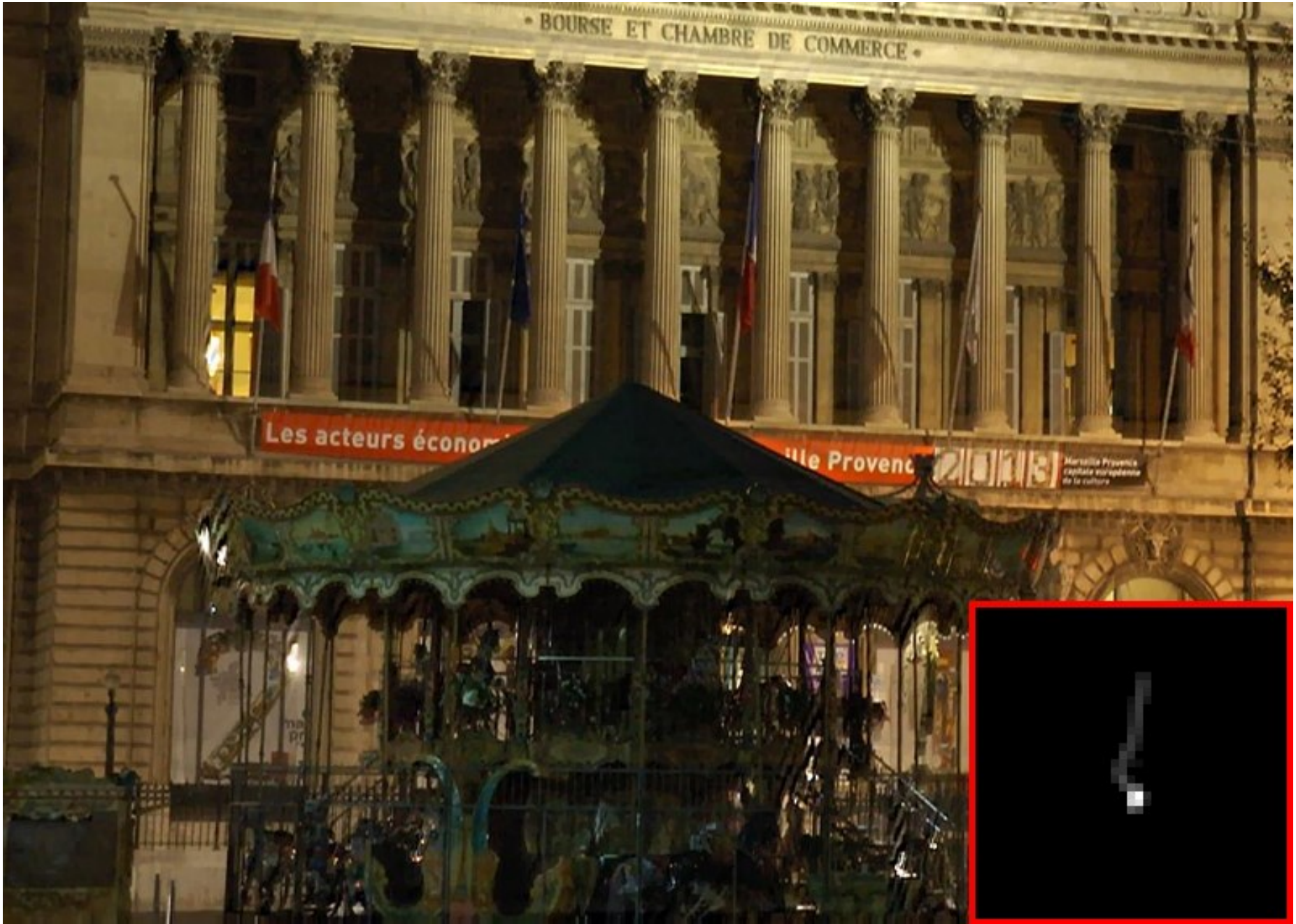


Michaeli & Irani

Michaeli & Irani (+ Zoran & Weiss)



Our (+ Zoran & Weiss)



Blurred Input

Cho & Lee

Cho & Lee (+ Zoran & Weiss)

Xu & Jia

Xu & Jia (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

Levin *et al.* (+ Zoran & Weiss)

Sun *et al.* (+ Zoran & Weiss)

Michaeli & Irani

Michaeli & Irani (+ Zoran & Weiss)

Our (+ Zoran & Weiss)

Blurred Input

Cho & Lee


Aprovado pelo
Programa Brasileiro
de Certificação
Florestal
Cartão

Cho & Lee (+ Zoran & Weiss)

Xu & Jia


Aprovado pelo
Programa Brasileiro
de Certificação
Florestal
Cerflor

Xu & Jia (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

Levin *et al.* (+ Zoran & Weiss)

Sun *et al.* (+ Zoran & Weiss)

Michaeli & Irani

Michaeli & Irani (+ Zoran & Weiss)

Our (+ Zoran & Weiss)

Blurred Input

Cho & Lee

Cho & Lee (+ Zoran & Weiss)

Xu & Jia

Xu & Jia (+ Zoran & Weiss)

Krishnan *et al.* (+ Zoran & Weiss)

Levin *et al.* (+ Zoran & Weiss)

Sun *et al.* (+ Zoran & Weiss)

Michaeli & Irani

Michaeli & Irani (+ Zoran & Weiss)

Our (+ Zoran & Weiss)