Rebuttal: Rethinking No-reference Image Exposure Assessment from Holism to Pixel: Models, Datasets and Benchmarks

Table 1. Comparison of 3 wavelets.

	MAE↓	SSIM↑
Haar	**0.03**	**0.75**
Daubechies	0.07	0.49
Symlet	0.08	0.41

Table 2. Ablation studies of Haar DWT.

	Training Epoch↓	MAE↓	SSIM↑
with DWT	**30**	**0.03**	**0.75**
w/o DWT	55	0.08	0.43

Table 3. Ablation studies of Haar DWT^{-1}.

	MAE ↓	SSIM↑
with DWT^{-1}	**0.03**	**0.75**
w/o DWT^{-1}	0.04	0.68

Table 4. Comparison of 3 loss functions.

	Epoch↓	SSIM↑
L1-norm	**30**	**0.75**
L2-norm	50	0.62
Smooth L1	45	0.67

Table 5. Trained on the converted IEA40k-h dataset.

IEA40K-h	Retinex	LIT	TANet	EAT	Ours
LRCC↑	0.80	0.81	0.80	0.82	**0.87**
SRCC↑	0.77	0.76	0.76	0.77	**0.83**

Table 6. Cross-dataset evaluations of holistic IEA tasks.

	Training Dataset	Testing Dataset	
		IEA40K-h	SPAQ
EAT	IEA40K-h	0.82	0.68
	SPAQ	0.53	0.71
Ours	IEA40K-h	0.87	0.76
	SPAQ	0.59	0.78

Table 7. The PSNR results on IEA40k.

	FEC	MSLT	Retinex	SMG
PSNR↑	23.22	21.02	23.8	24.17
	SKF	GSAD	LIT	Ours
PSNR↑	21.68	19.37	23.51	**28.04**

Table 8. Predicting residual from two ways.

	Retinex	PyDiff	LIT	Ours
Predict residual	0.42	0.50	0.60	**0.75**
Predict reference	0.37	0.42	0.51	**0.66**

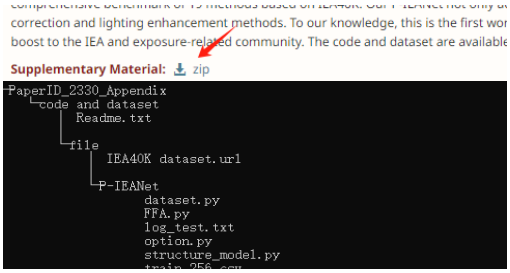

Figure 1. About the proof that we have provided code and dataset in the supplementary materials.

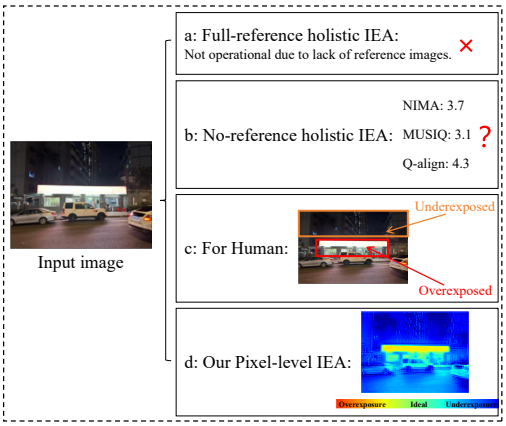

Figure 2. The visual example explains the motivation. a) Full-reference holistic IEA methods: Often, when using these methods, an input image may not have an available reference image, which limits their applicability. b) No-reference holistic IEA methods: These methods provide only a single score and the granularity of the evaluation is insufficient, which fails to reflect the exposure conditions of specific areas. Furthermore, it's challenging to discern from the score whether the issue is underexposure or overexposure and the scoring criteria highly influence the scores. c) For Humans: Humans are more adept at pinpointing areas within an image that are underexposed or overexposed. d) Our Pixel-level IEA: Similar to human assessment, our pixel-level IEA objectively identify the deviation of each pixel from the ideal exposure.

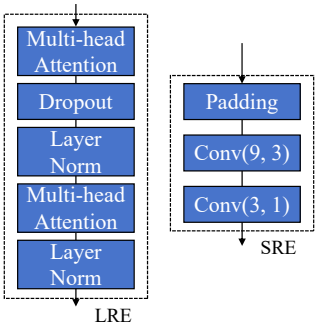

Figure 3. The architecture of LRE and SRE.