Table 1: Quantitative comparison between five different evaluation settings: PredMI, ExpMI, RND, OND, and GNIME. Values inside brackets indicate the degradation in inversion performance compared to ExpMI. The best results in mitigating ExpMI are highlighted in bold.

	Metric	PredMI	Grad				Grad-CAM				LRP			
			ExpMI	RND	OND	GNIME	ExpMI	RND	OND	GNIME	ExpMI	RND	OND	GNIME
CelebA	MSE↑	±.0015 .0287	±.0011 .0141	±.0010 .0184 (.0043↑)	±.0009 .0185 (.0045↑)	±.0005 **.0222** **(.0081↑)**	±.0011 .0183	±.0006 .0191 (.0009↑)	±.0003 .0200 (.0017↑)	±.0004 **.0229** **(.0046↑)**	±.0008 .0069	±.0002 .0124 (.0056↑)	±.0011 .0155 (.0086↑)	±.0007 **.0234** **(.0165↑)**
	SSIM↓	±.0242 .4427	±.0276 .6504	±.0302 .5430 (.1074↓)	±.0216 .5357 (.1147↓)	±.0060 **.5093** **(.1410↓)**	±.0189 .5823	±.0144 .5417 (.0406↓)	±.0080 .5274 (.0550↓)	±.0046 **.4952** **(.0871↓)**	±.0224 .8233	±.0022 .6370 (.1863↓)	±.0209 .5805 (.2428↓)	±.0130 **.4960** **(.3273↓)**
	TCA↓	±.0050 .0217	±.0142 .1000	±.0171 .0690 (.0310↓)	±.0114 .0570 (.0430↓)	±.0032 **.0254** **(.0746↓)**	±.0085 .1097	±.0067 .0860 (.0237↓)	±.0034 .0795 (.0302↓)	±.0034 **.0445** **(.0652↓)**	±.0062 .2147	±.0037 .1559 (.0588↓)	±.0116 .1207 (.0940↓)	±.0103 **.0326** **(.1821↓)**
	DeePSiM↓	±.0033 .1851	±.0155 .2470	±.0111 .2117 (.0353↓)	±.0095 .2064 (.0406↓)	±.0021 **.1880** **(.0590↓)**	±.0136 .2745	±.0063 .2556 (.0189↓)	±.0031 .2490 (.0255↓)	±.0027 **.2040** **(.0706↓)**	±.0284 .4922	±.0034 .3678 (.1243↓)	±.0161 .3006 (.1915↓)	±.0092 **.1944** **(.2978↓)**
MNIST	MSE↑	±.0001 .0237	±.0003 .0051	±.0002 .0067 (.0016↑)	±.0003 .0070 (.0019↑)	±.0003 **.0143** **(.0092↑)**	±.0003 .0021	±.0002 .0059 (.0038↑)	±.0003 .0061 (.0040↑)	±.0002 **.0177** **(.0156↑)**	±.0001 .0012	±.0001 .0037 (.0025↑)	±.0003 .0044 (.0032↑)	±.0001 **.0168** **(.0156↑)**
	SSIM↓	±.0068 .5542	±.0133 .9065	±.0249 .8707 (.0358↓)	±.0115 .8753 (.0312↓)	±.0046 **.7686** **(.1379↓)**	±.0068 .9613	±.0039 .9009 (.0605↓)	±.0150 .8929 (.0685↓)	±.0026 **.7213** **(.2400↓)**	±.0009 .9767	±.0052 .9314 (.0453↓)	±.0064 .9044 (.0723↓)	±.0037 **.7356** **(.2411↓)**
	TCA↓	±.0024 .9751	±.0009 .9850	±.0005 .9835 (.0015↓)	±.0012 .9826 (.0024↓)	±.0011 **.9770** **(.0080↓)**	±.0009 .9871	±.0010 .9825 (.0047↓)	±.0010 .9815 (.0056↓)	±.0021 **.9715** **(.0156↓)**	±.0004 .9867	±.0012 .9833 (.0033↓)	±.0008 .9815 (.0052↓)	±.0014 **.9726** **(.0141↓)**
	DeePSiM↓	±.0009 .8541	±.0025 .9367	±.0010 .9317 (.0049↓)	±.0020 .9293 (.0074↓)	±.0022 **.8974** **(.0392↓)**	±.0027 .9645	±.0024 .9358 (.0287↓)	±.0024 .9353 (.0292↓)	±.0019 **.8850** **(.0794↓)**	±.0008 .9695	±.0007 .9505 (.0190↓)	±.0056 .9287 (.0409↓)	±.0017 **.8874** **(.0821↓)**
CIFAR-10	MSE↑	±.0002 .0486	±.0003 .0374	±.0005 .0416 (.0042↑)	±.0007 .0416 (.0042↑)	±.0001 **.0469** **(.0095↑)**	±.0002 .0322	±.0003 .0374 (.0052↑)	±.0003 .0382 (.0061↑)	±.0001 **.0452** **(.0131↑)**	±.0003 .0087	±.0008 .0157 (.0070↑)	±.0003 .0174 (.0087↑)	±.0004 **.0409** **(.0322↑)**
	SSIM↓	±.0002 .1688	±.0135 .2904	±.0140 .2430 (.0475↓)	±.0102 .2236 (.0668↓)	±.0099 **.1846** **(.1059↓)**	±.0042 .3348	±.0076 .2654 (.0694↓)	±.0076 .2454 (.0894↓)	±.0017 **.1855** **(.1493↓)**	±.0114 .8862	±.0133 .6782 (.2081↓)	±.0081 .6369 (.2493↓)	±.0176 **.2740** **(.6123↓)**
	TCA↓	±.0058 .2969	±.0276 .3769	±.0219 .3157 (.0611↓)	±.0184 .3125 (.0644↓)	±.0138 **.2902** **(.0867↓)**	±.0049 .3952	±.0060 .3375 (.0577↓)	±.0141 .3334 (.0618↓)	±.0061 **.2978** **(.0974↓)**	±.0076 .6651	±.0122 .5770 (.0881↓)	±.0096 .5780 (.0872↓)	±.0194 **.3290** **(.3361↓)**
	DeePSiM↓	±.0001 .8344	±.0016 .8500	±.0018 .8441 (.0059↓)	±.0017 .8441 (.0059↓)	±.0010 **.8364** **(.0136↓)**	±.0007 .8603	±.0009 .8505 (.0098↓)	±.0011 .8485 (.0118↓)	±.0002 **.8386** **(.0217↓)**	±.0023 .9378	±.0023 .9112 (.0265↓)	±.0013 .9073 (.0305↓)	±.0024 **.8487** **(.0890↓)**
ImageNet-100	MSE↑	±.0002 .0438	±.0008 .0324	±.0013 .0377 (.0053↑)	±.0011 .0364 (.0040↑)	±.0003 **.0418** **(.0094↑)**	±.0002 .0366	±.0002 .0401 (.0034↑)	±.0002 .0377 (.0011↑)	±.0002 **.0425** **(.0059↑)**	±.0009 .0166	±.0007 .0261 (.0095↑)	±.0015 .0309 (.0143↑)	±.0005 **.0437** **(.0272↑)**
	SSIM↓	±.0016 .3393	±.0096 .3877	±.0060 .3471 (.0405↓)	±.0067 .3463 (.0414↓)	±.0019 **.3385** **(.0492↓)**	±.0014 .3469	±.0013 .3410 (.0058↓)	±.0018 .3410 (.0059↓)	±.0037 **.3335** **(.0134↓)**	±.0247 .6541	±.0073 .4256 (.2285↓)	±.0149 .3560 (.2981↓)	±.0031 **.3371** **(.3170↓)**
	TCA↓	±.0022 .0373	±.0161 .1242	±.0107 .0893 (.0349↓)	±.0080 .0711 (.0531↓)	±.0039 **.0445** **(.0797↓)**	±.0025 .0615	±.0055 .0514 (.0101↓)	±.0021 .0469 (.0145↓)	±.0026 **.0388** **(.0227↓)**	±.0117 .2689	±.0057 .2067 (.0622↓)	±.0234 .0876 (.1813↓)	±.0043 **.0416** **(.2273↓)**
	DeePSiM↓	±.0004 .5451	±.0073 .5826	±.0098 .5755 (.0072↓)	±.0056 .5556 (.0270↓)	±.0009 **.5484** **(.0342↓)**	±.0017 .5593	±.0029 .5541 (.0052↓)	±.0011 .5505 (.0088↓)	±.0007 **.5464** **(.0129↓)**	±.0107 .6826	±.0033 .6440 (.0386↓)	±.0086 .5838 (.0988↓)	±.0027 **.5507** **(.1319↓)**