

TUDSR: Twice Upsampling-Diffusion for Higher Super-Resolution

Supplementary Material

7. More Visualizations on TUDSR-S ($\times 8$)

Figure 7 shows more visualizations of twice upsampling-diffusion ($\times 8$) on TUDSR-S. M4N2 achieves the best clarity and detail across all 10 cases from RealLQ250. The quality of the image generated by M8 is also significantly lower than that of M4N2, while N8 achieves the worst results. This result indicates that decomposing $\times 8$ into $\times 4$ and $\times 2$ has excellent performance in high-resolution generation.

8. More Qualitative Comparisons ($\times 8$)

Figures 8 and 9 show more visual comparisons of $\times 8$ SR ($256^2 \rightarrow 2048^2$). TUDSR-S exhibits overwhelming performance across these one-step models, highlighting the effectiveness of our twice upsampling-diffusion method.



Figure 7. Visualization of twice upsampling-diffusion ($\times 8$ *i.e.* $256^2 \rightarrow 2048^2$). The LQ images (from top to bottom) are from RealLQ250 (014, 080, 100, 104, 111, 154, 166, 212, 228, 230). Please **zoom in**.

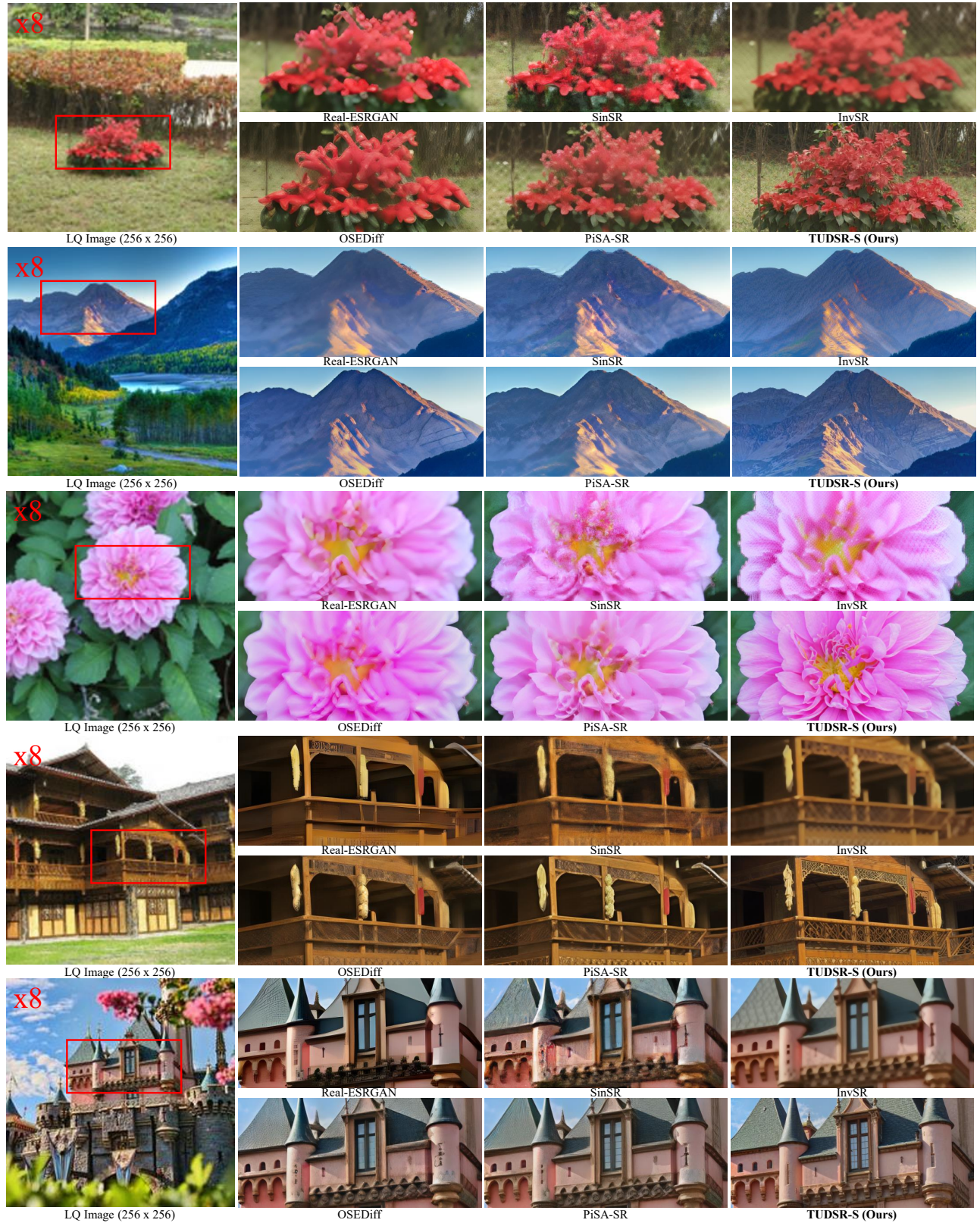


Figure 8. Qualitative comparisons ($\times 8$ *i.e.* $256^2 \rightarrow 2048^2$) with state-of-the-art one-step models. The LQ images (from top to bottom) are from RealLQ250 (014, 080, 100, 104, 111). Please **zoom in**.

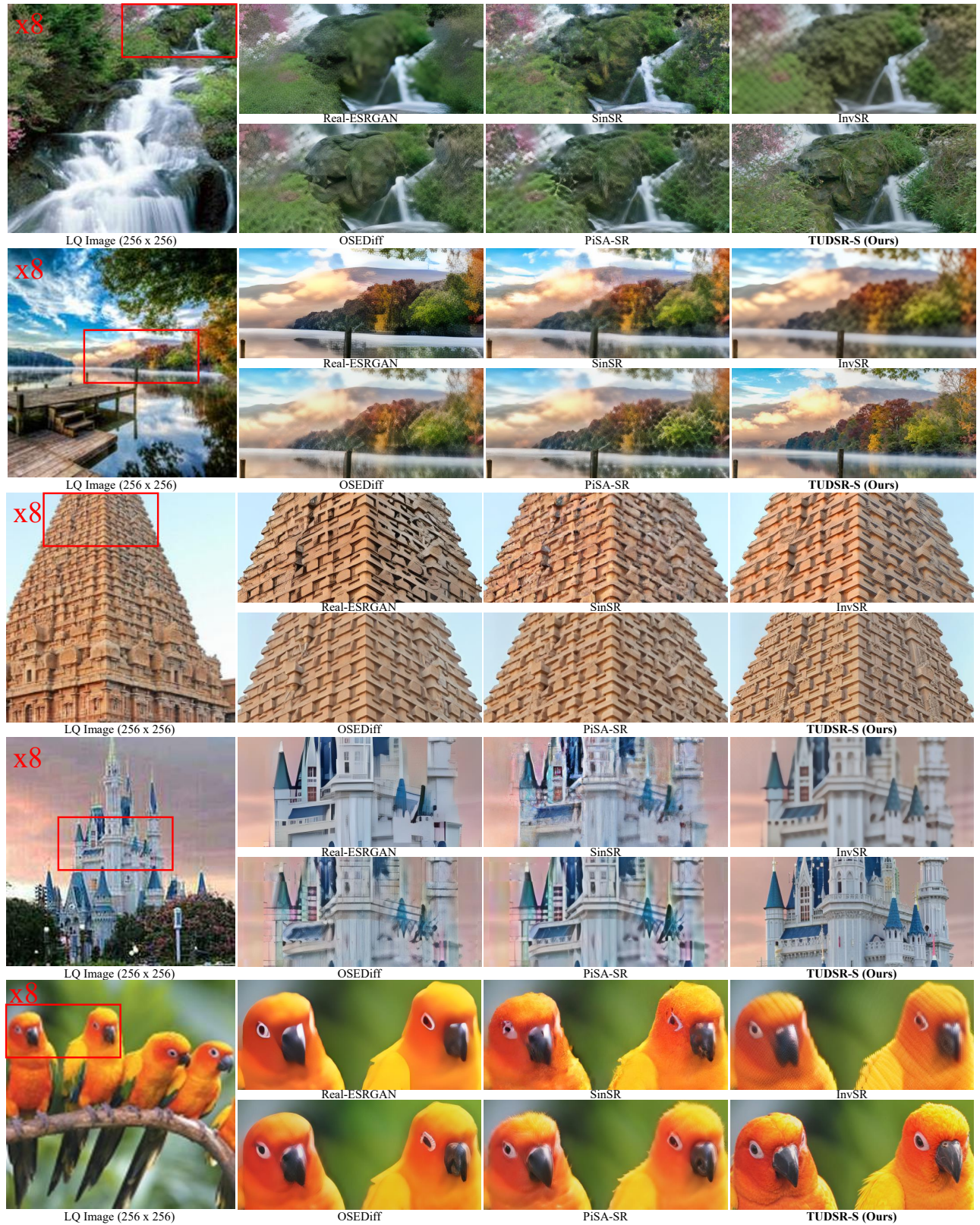


Figure 9. Qualitative comparisons ($\times 8$ *i.e.* $256^2 \rightarrow 2048^2$) with state-of-the-art one-step models. The LQ images (from top to bottom) are from ReallQ250 (154, 166, 212, 228, 230). Please **zoom in**.