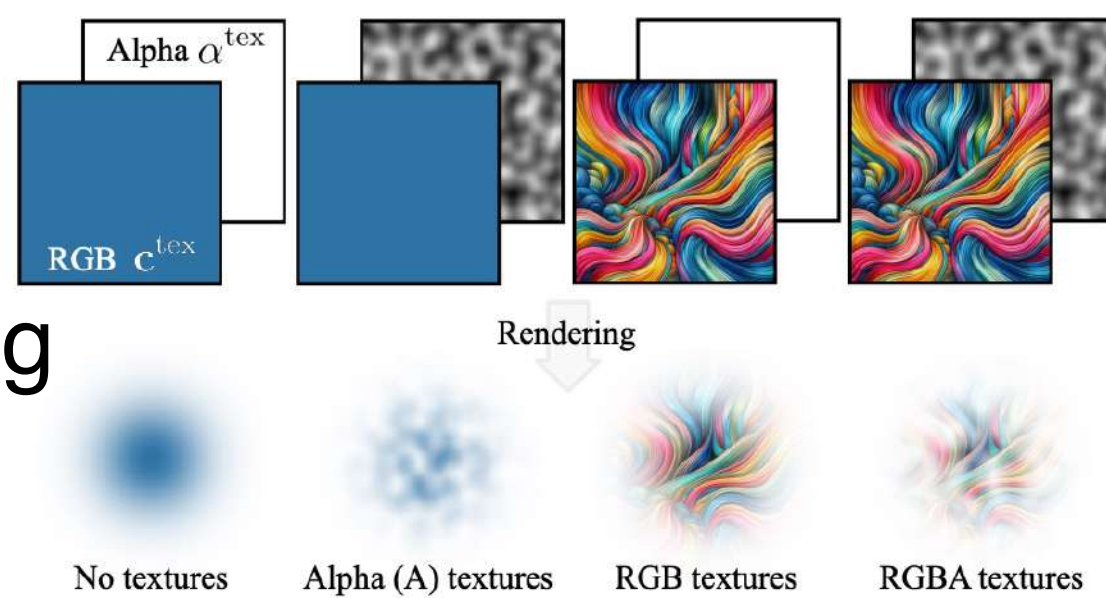




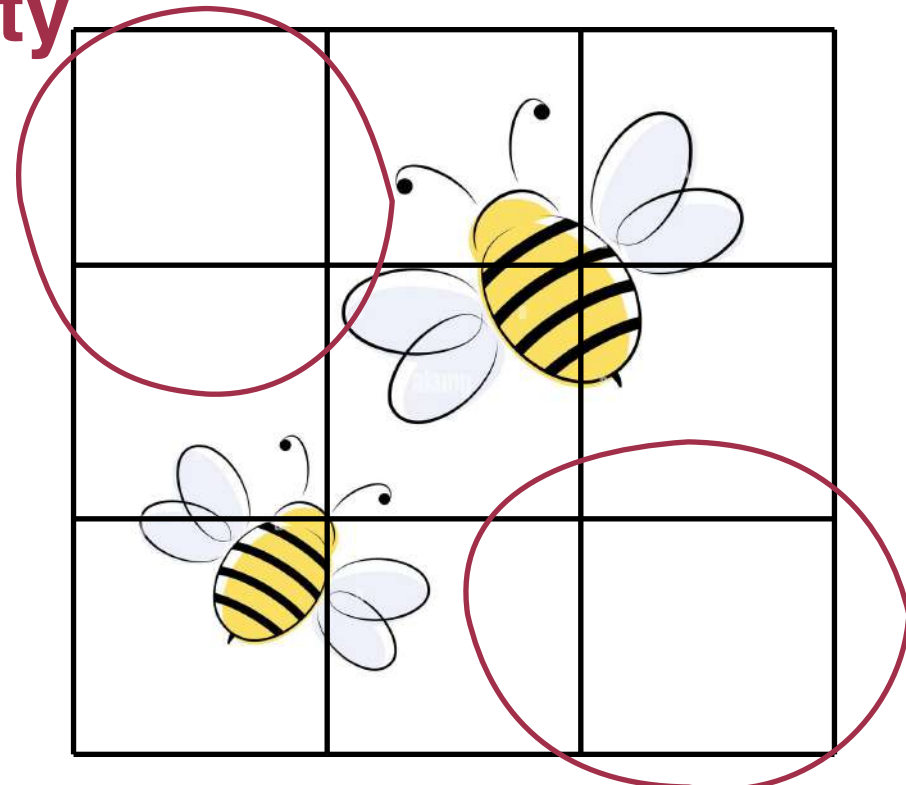
Motivation

Textured GS^[1]:

- ✗ Inefficient texture space utilization
- ✗ Inefficient texture resolution scaling

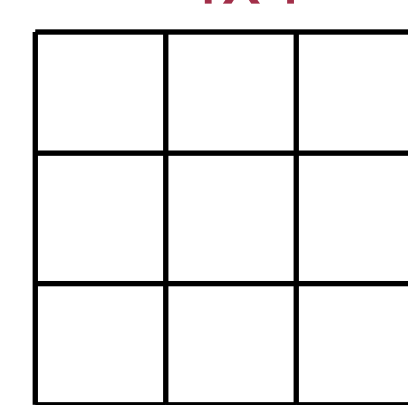


Empty

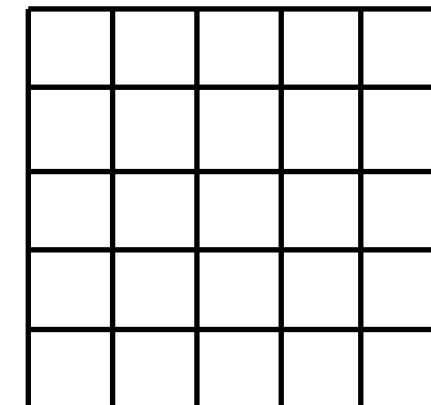
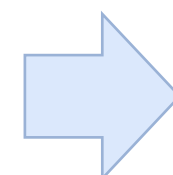


Empty

4x4



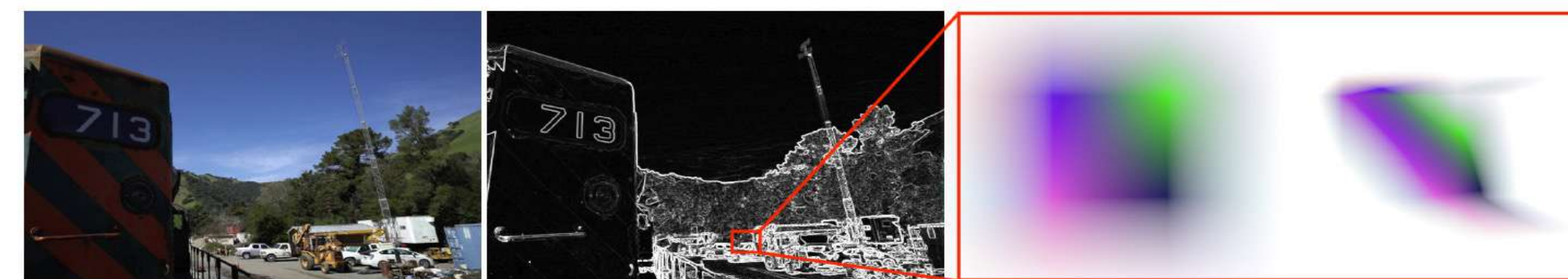
2.25x parameters



Experiments

✓
Better High-frequency Response

✓
More Efficient Memory Usage

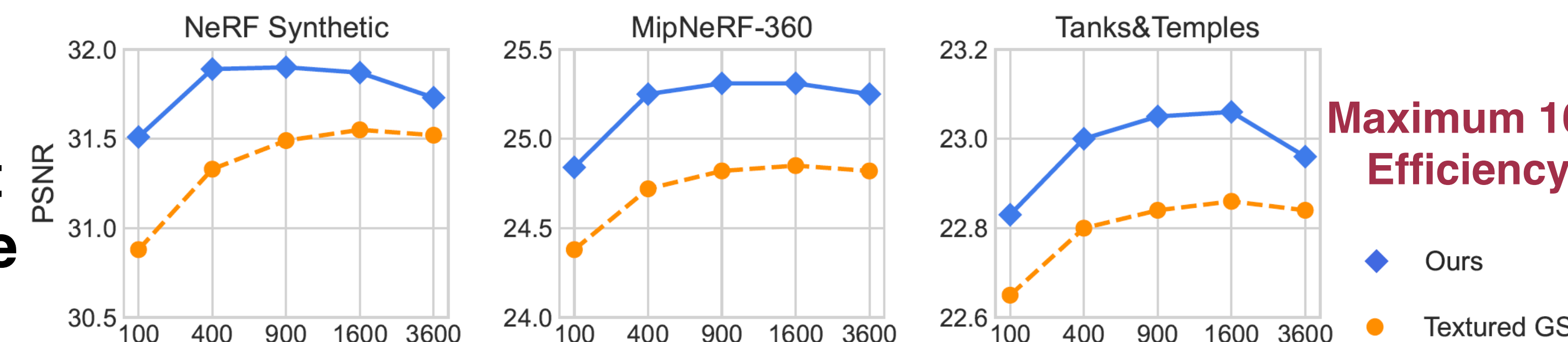


(A) RGB Image

(B) RGB Gradient

(C) TexturedGS

(D) Ours



Maximum 16x Efficiency

◆ Ours

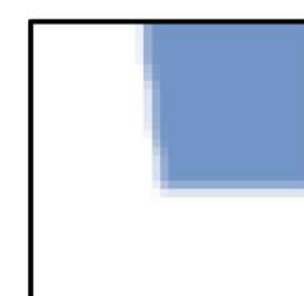
● Textured GS

Method

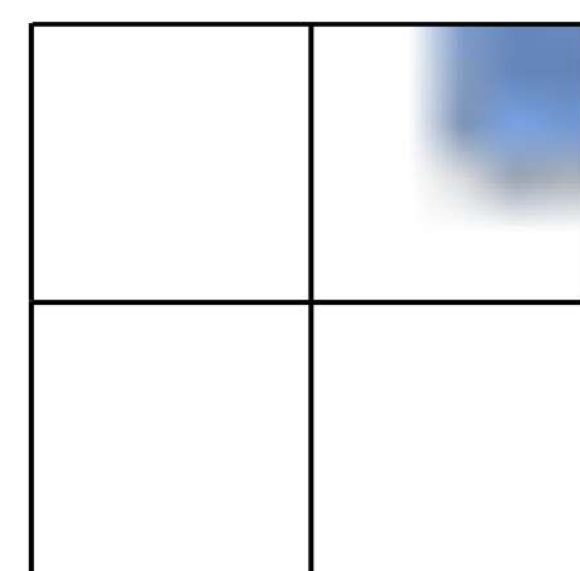
$$c(u, v) = \text{bilerp}(u, v, T)$$

$$(u', v') = \phi(u, v) = (u + du, v + dv)$$

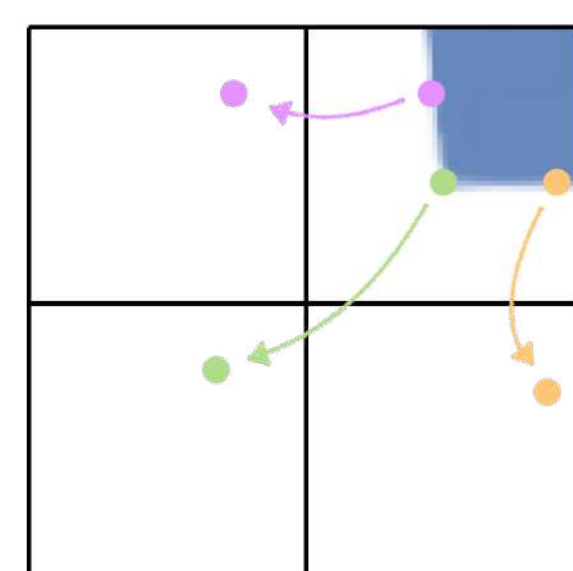
$$c(u, v) = \text{bilerp}(u', v', T)$$



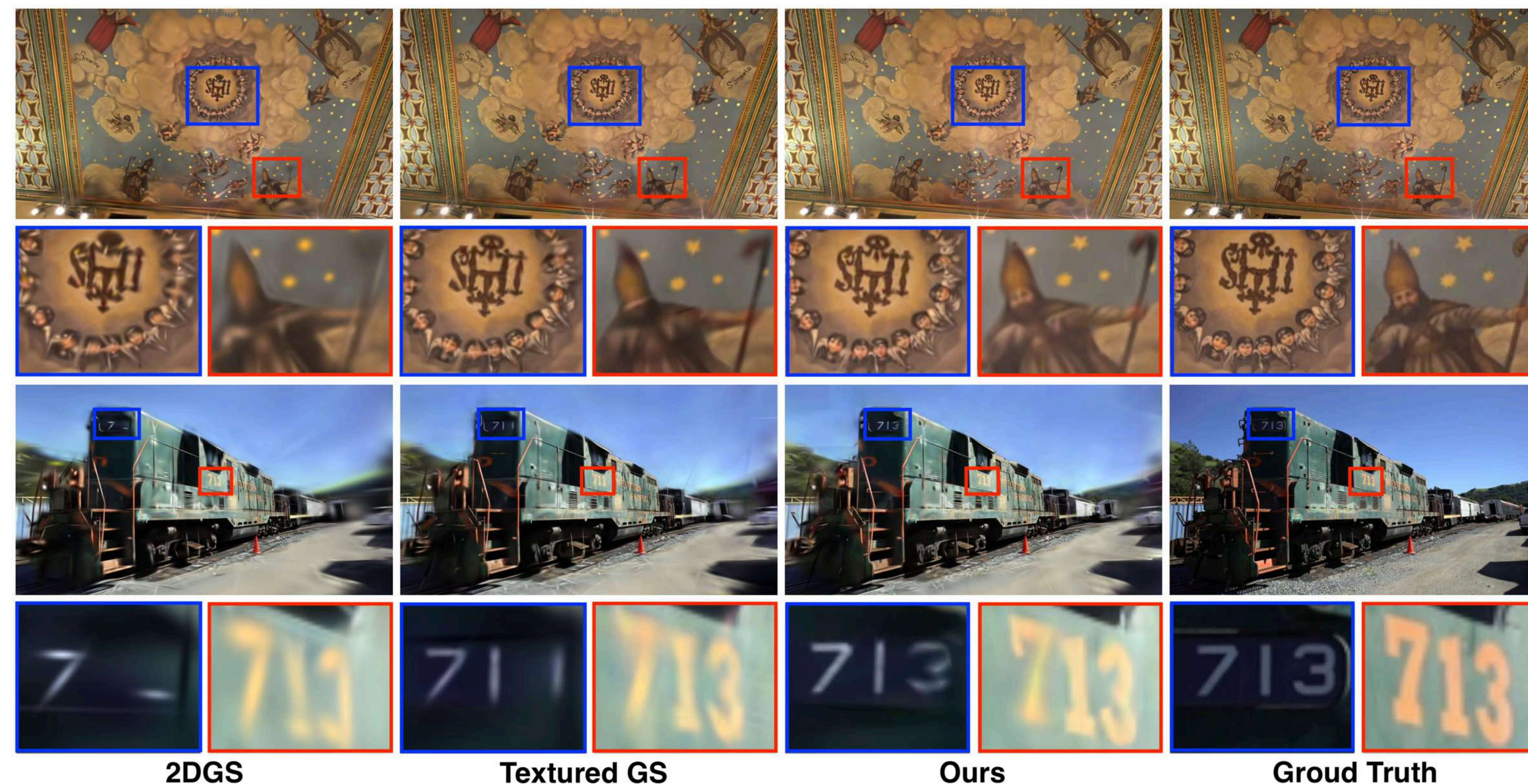
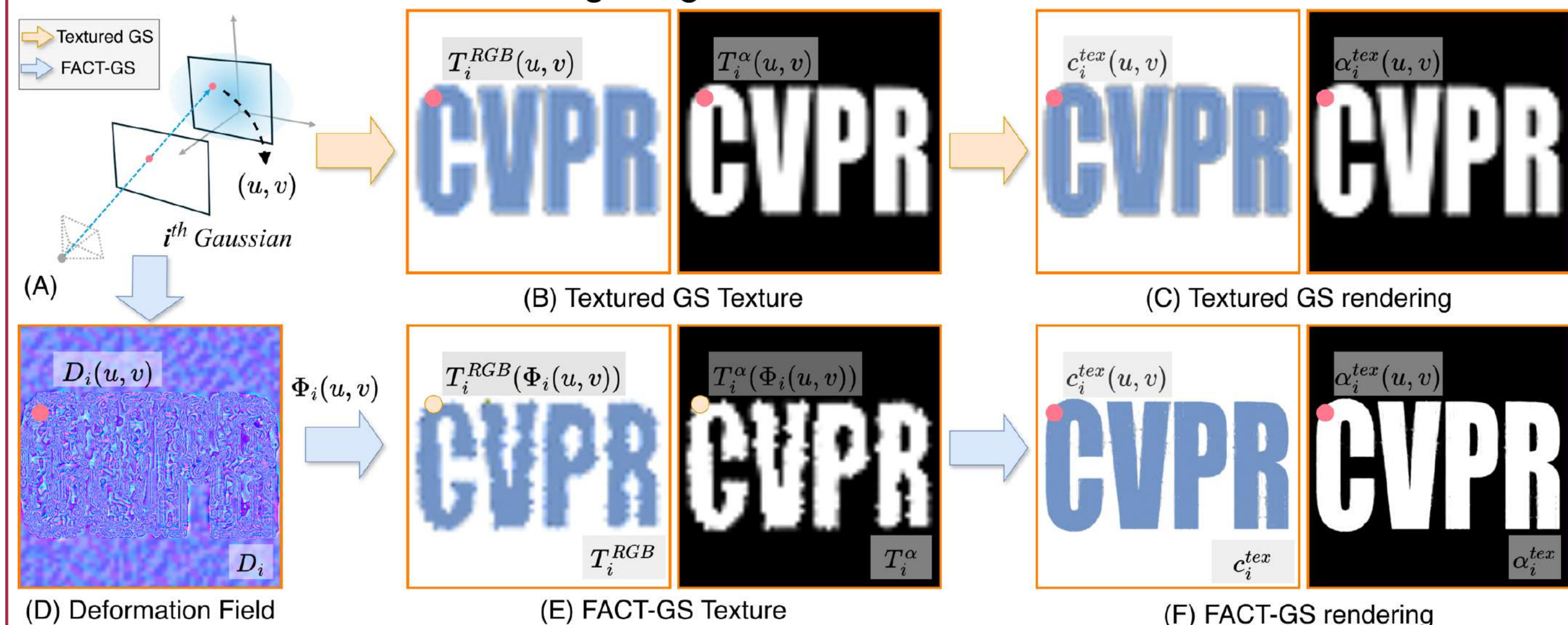
GT



Regular grid



Ours



2DGS

Textured GS

Ours

Ground Truth

[1] Chao, Brian, et al. "Textured gaussians for enhanced 3d scene appearance modeling." *Proceedings of the Computer Vision and Pattern Recognition Conference*. 2025.



tianhao.xie@mail.concordia.ca



https://tianhaoxie.github.io/

OPENTOWORK!

Optimization Objective: $\mathcal{L} = \eta \mathcal{L}_1 + (1 - \eta) \mathcal{L}_{SSIM} + \mathcal{L}_\alpha$