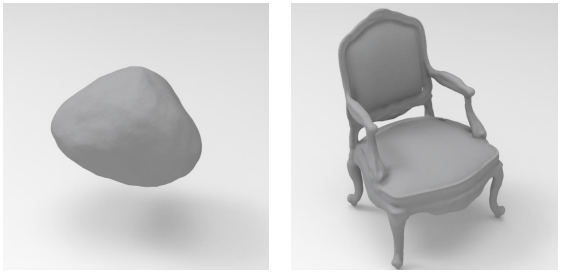
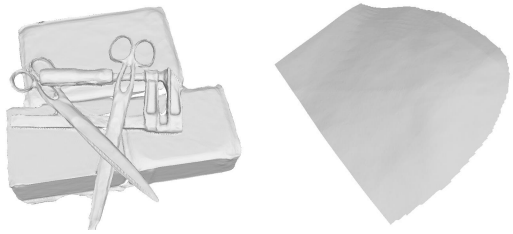


Surfels Flat Loss

Figure A. Comparison between surfel setting and flat loss.



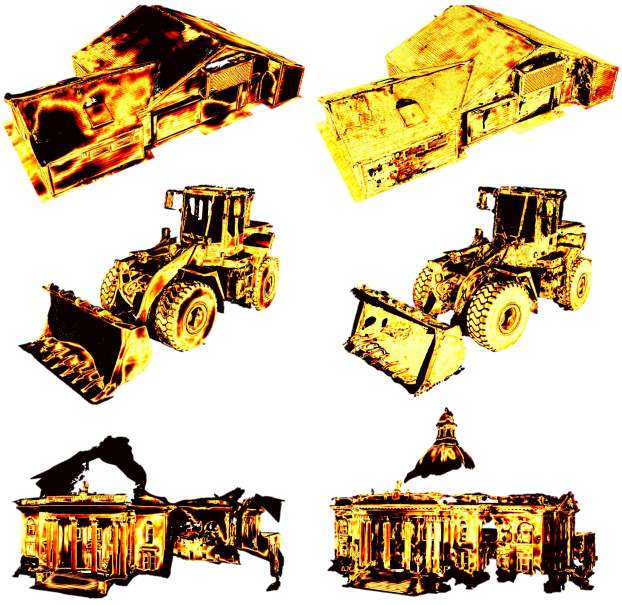
w/o Eikonal loss w/ Eikonal loss

Figure B. Visulization of the effect of eikonal loss.

Table A. Effects of different pulling and densification strategies.

Settings	Original	Pull from beginning	Densification until end
CD↓	**0.56**	0.92	0.59
Time(min)	**22.8**	51.9	62.5

2DGS Ours

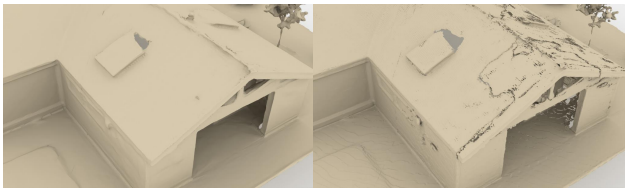


Large Error Small Error

Figure C. Visulization of error maps between 2DGS and ours.

Table B. Ablation studies on TNT dataset.

	Pulling		Constraint Terms			Mesh Extractions		
Methods	Pulled to centers	w/o Pull GS	w/o L_{Thin}	w/o L_{Tan}	w/o L_{Oth}	TSDF	Poisson	Full model
F-Score↑	0.39	0.30	0.35	0.36	0.40	0.24	0.40	0.43

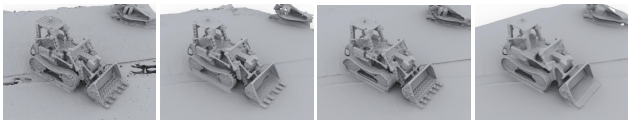


Learning SDF Learning UDF

Figure D. Visualization of surfaces reconstructed by SDF and UDF.

Input Points Neural-Pull Ours

Figure E. Comparison of overfitting sparse point clouds between NeuralPull and our method.

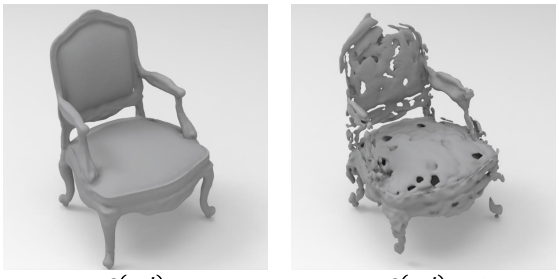


SuGaR 2DGS Ours (Screened Poisson) Ours (Marching Cubes)

Figure F. Comparisons of mesh extraction methods and baselines.

Table C. Ablation studies on DTU dataset.

	Pulling		Constraint Terms			Mesh Extractions		
Methods	Pulled to centers	w/o Pull GS	w/o L_{Thin}	w/o L_{Tan}	w/o L_{Oth}	TSDF	Poisson	Full model
CD↓	0.62	0.57	0.51	0.55	0.50	1.23	0.55	0.48



w/o $f(\mu_j') = 0$ w/ $f(\mu_j') = 0$

Figure G. Adding zero-level set constraint on Gaussians.

Table D. Quantitative evaluations on Mip-NeRF 360 dataset between GOF and our method.

	PSNR↑	SSIM↑	LPIPS↓
GOF	30.79	0.924	0.184
Ours	30.77	0.925	0.182