

Surfels Flat Loss

Figure A. Comparison between surfel setting and flat loss.

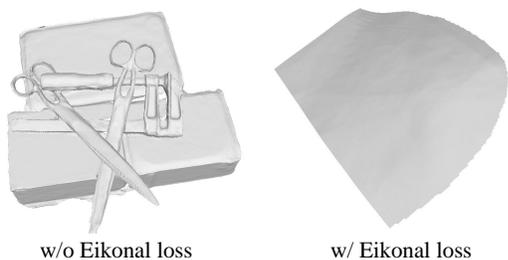


Figure B. Visualization of the effect of eikonal loss.

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

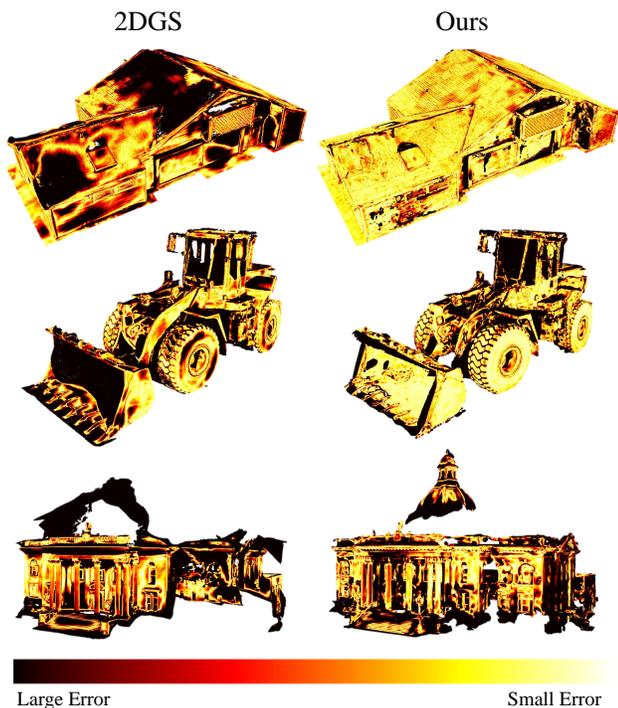


Figure C. Visualization of error maps between 2DGS and ours.

Table B. Ablation studies on TNT dataset.

Methods	Pulling		Constraint Terms			Mesh Extractions		
	Pulled to centers	w/o Pull GS	w/o L_{Thin}	w/o L_{Tan}	w/o L_{Orth}	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.

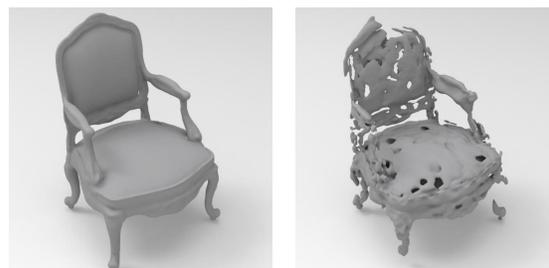


SuGaR 2DGS Ours (Screened Poisson) Ours (Marching Cubes)

Figure F. Comparisons of mesh extraction methods and baselines.

Table C. Ablation studies on DTU dataset.

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



w/o $f(\mu_j^i) = 0$ w/ $f(\mu_j^i) = 0$

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

000
001
002
003
004
005
006
007
008
009
010
011
012
013
014
015
016
017
018
019
020
021
022
023
024
025
026
027
028
029
030
031
032
033
034
035
036
037
038
039
040
041
042
043
044
045
046
047
048
049
050
051
052
053

054
055
056
057
058
059
060
061
062
063
064
065
066
067
068
069
070
071
072
073
074
075
076
077
078
079
080
081
082
083
084
085
086
087
088
089
090
091
092
093
094
095
096
097
098
099
100
101
102
103
104
105
106
107