

Tanks and Temples: Benchmarking Large-Scale Scene Reconstruction

Supplementary Material

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This supplementary material provides detailed visualizations of the results produced on each benchmark scene by each evaluated pipeline.

The first part of the supplement is laid out over pages 2–29. The results for each dataset are visualized over two pages. The first page shows reconstructed models, with distance to the ground truth coded by color; this corresponds to per-point precision. The second page shows the ground-truth model, with distance to each reconstruction coded by color; this corresponds to per-point recall. For each visualization, we list the corresponding overall precision $P(\tau)$ or recall $R(\tau)$. There are 14 datasets, thus 28 pages of such visualizations (pages 2–29).

In the second part of the supplement, pages 30–43, we show precision and recall curves for each pipeline on each dataset. For each dataset, we provide two figures, shown on the same page. The first figure shows precision curves: for each threshold d (in meters), each curve gives the precision $P(d)$ for the corresponding method on the corresponding dataset. The second figure on each page shows recall curves: for each threshold d , each curve gives the recall $R(d)$ for the corresponding method on the dataset. The threshold τ is marked by a thick dashed vertical line on each plot. The precision and recall plots for each dataset are shown on a single page. There are 14 datasets, thus 14 pages of plots (pages 30–43).



Figure 1. Family dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 2. Family dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

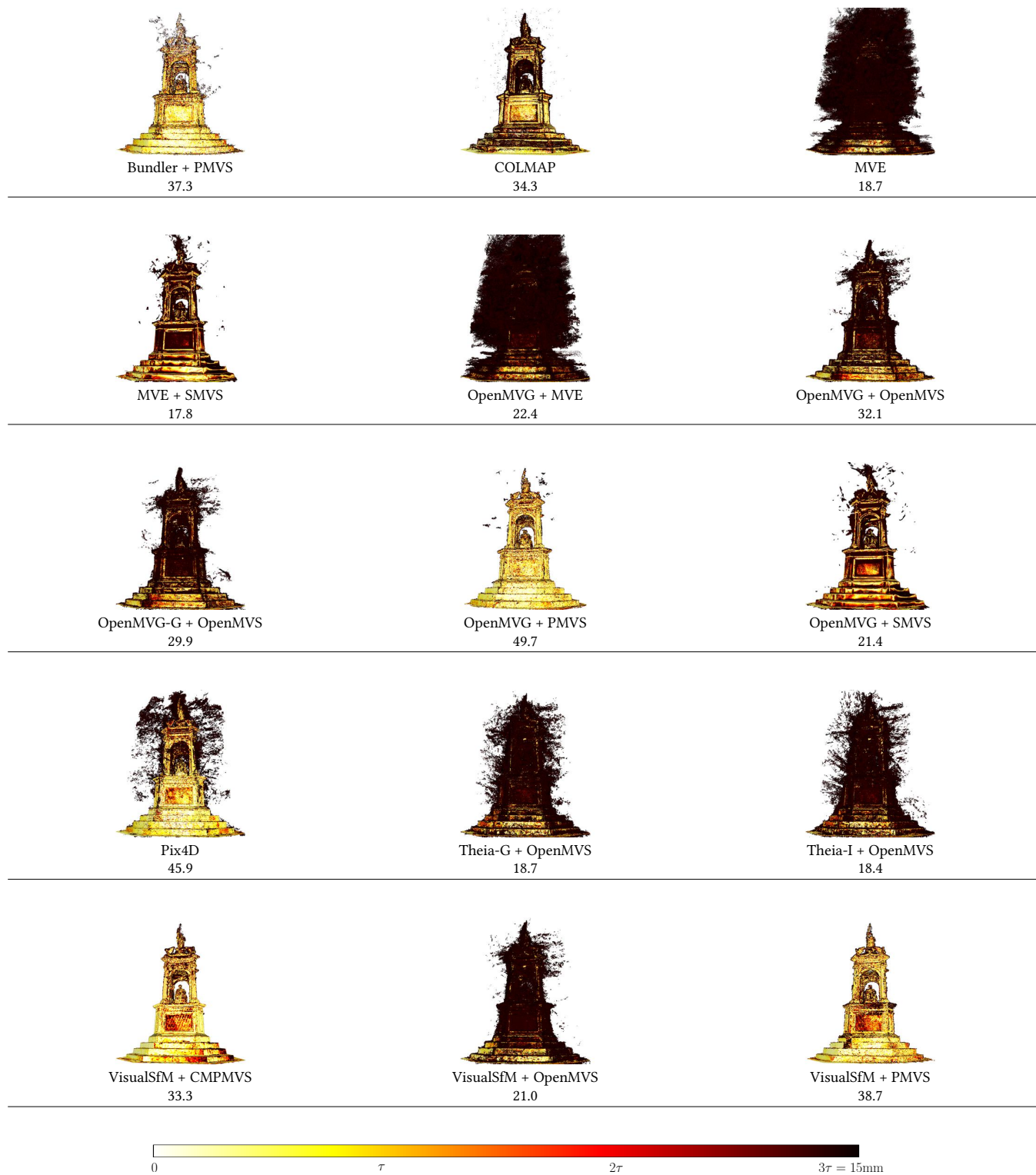


Figure 3. Francis dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.

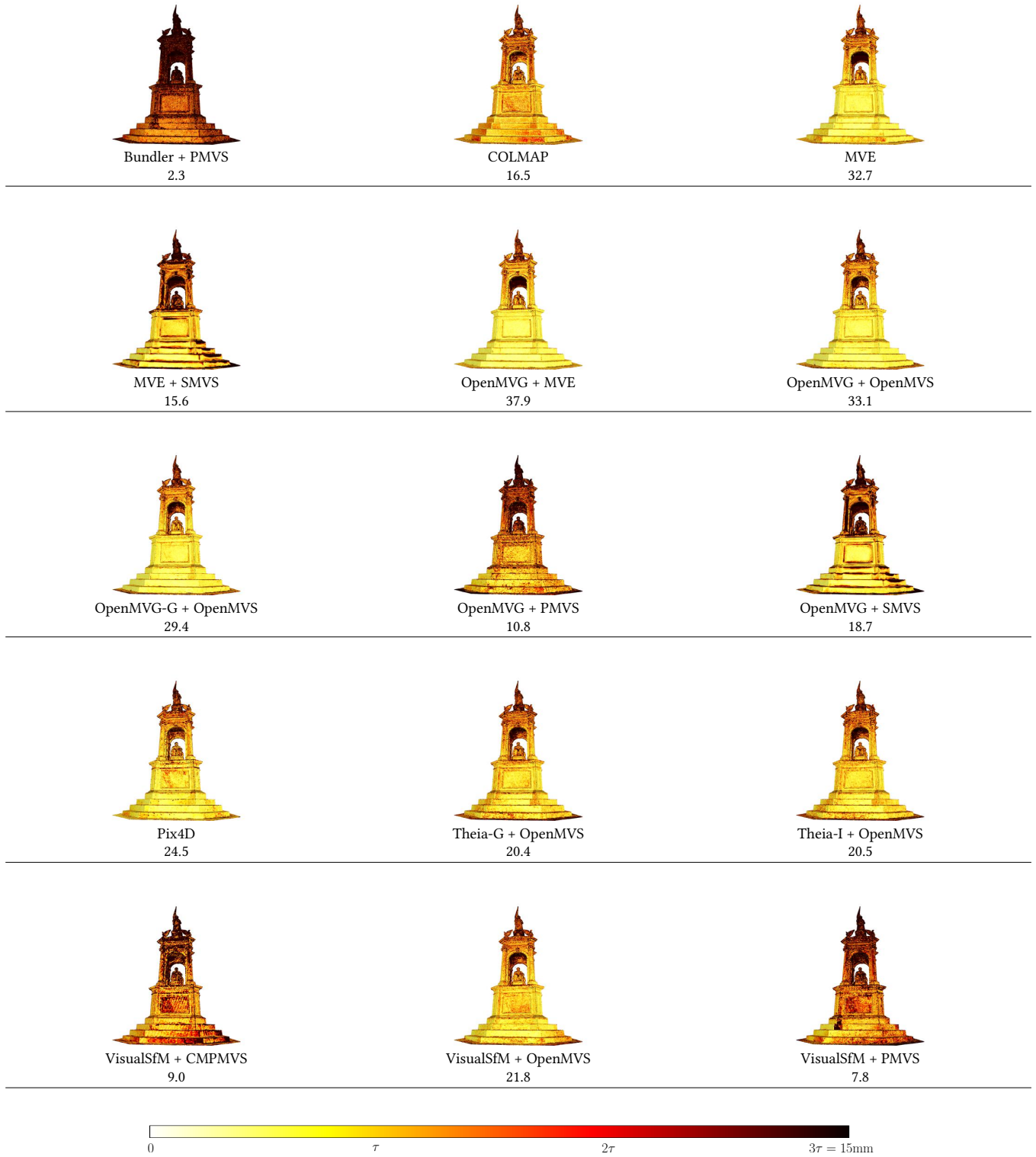


Figure 4. Francis dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

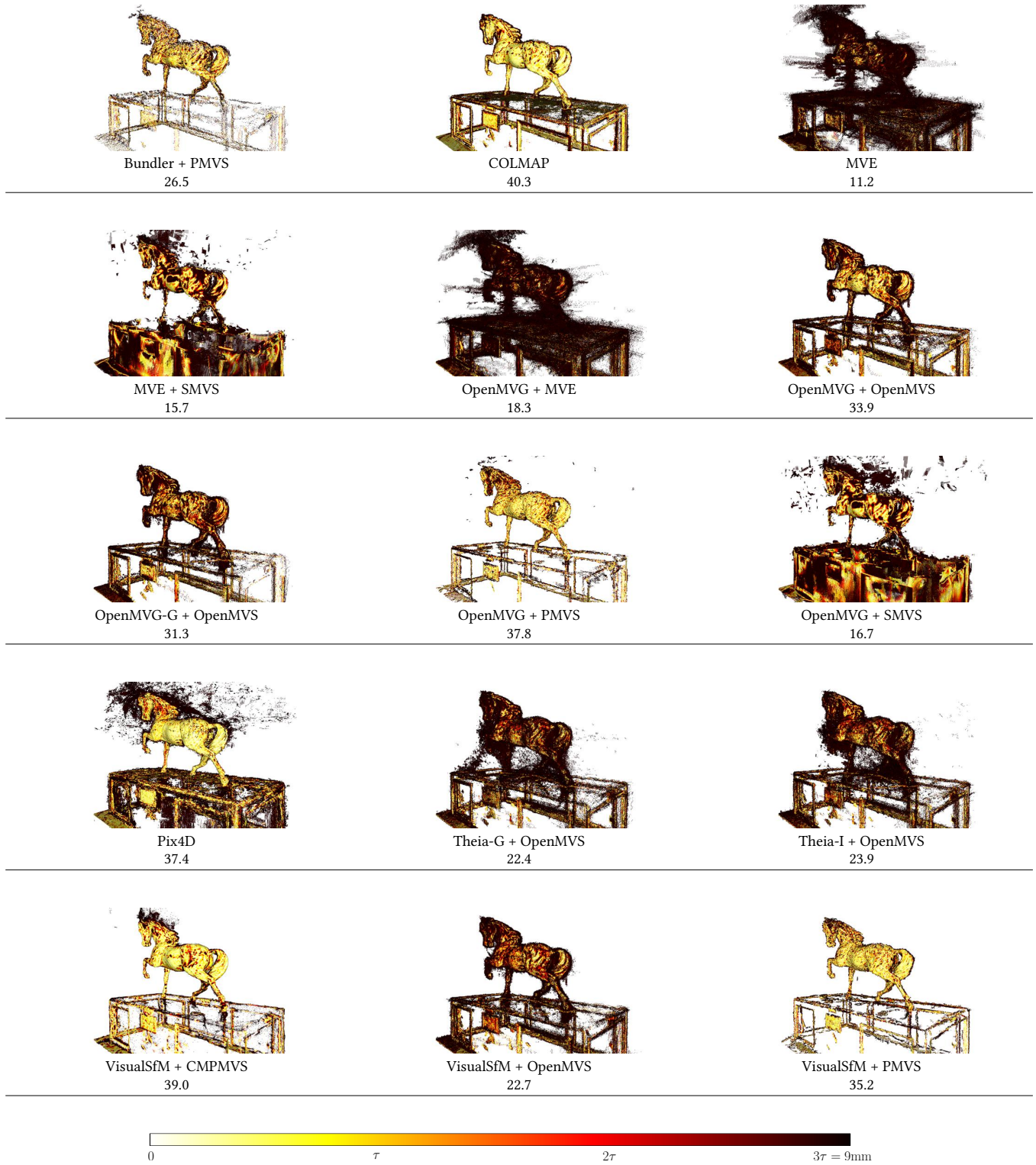


Figure 5. Horse dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.

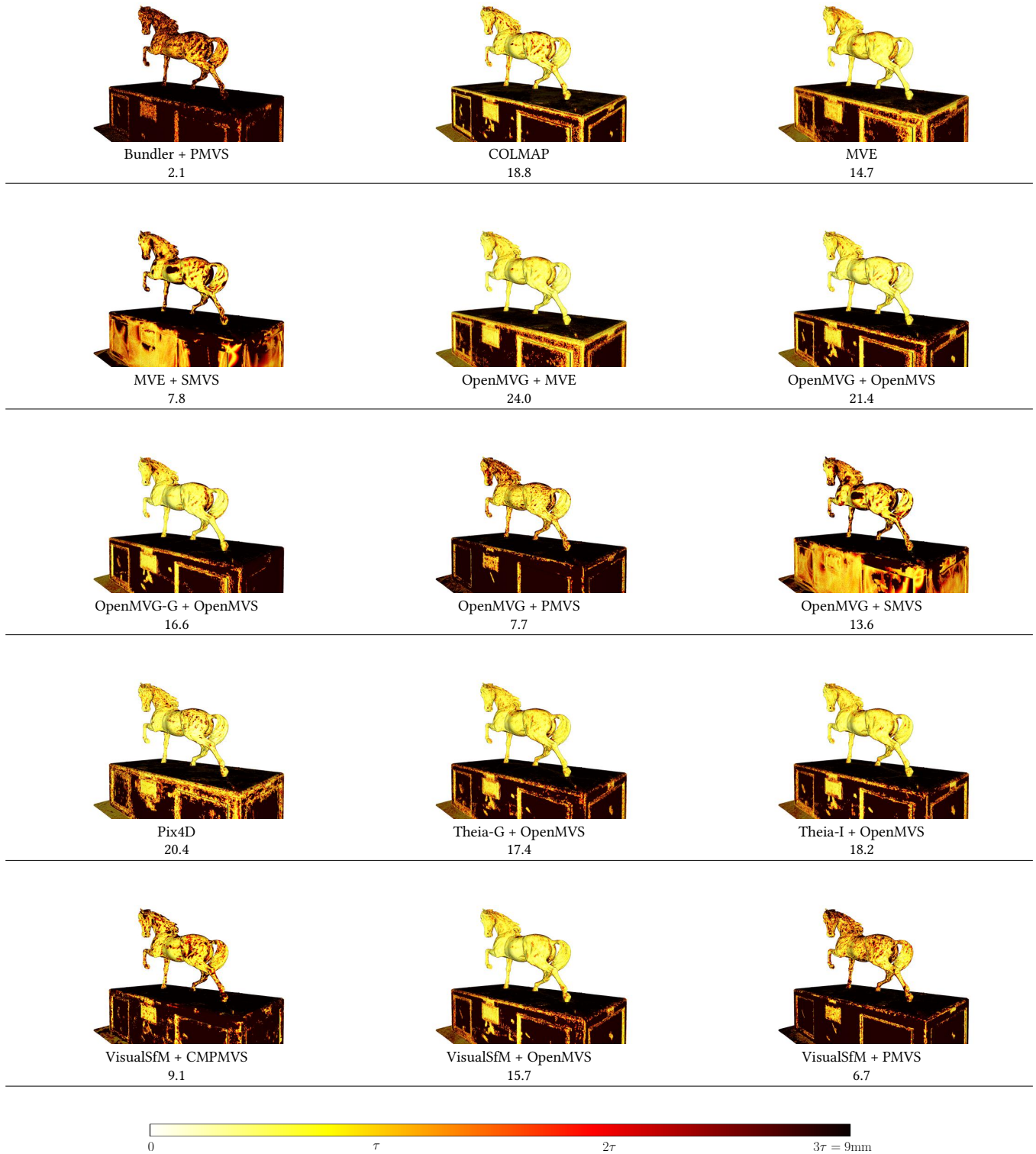


Figure 6. Horse dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

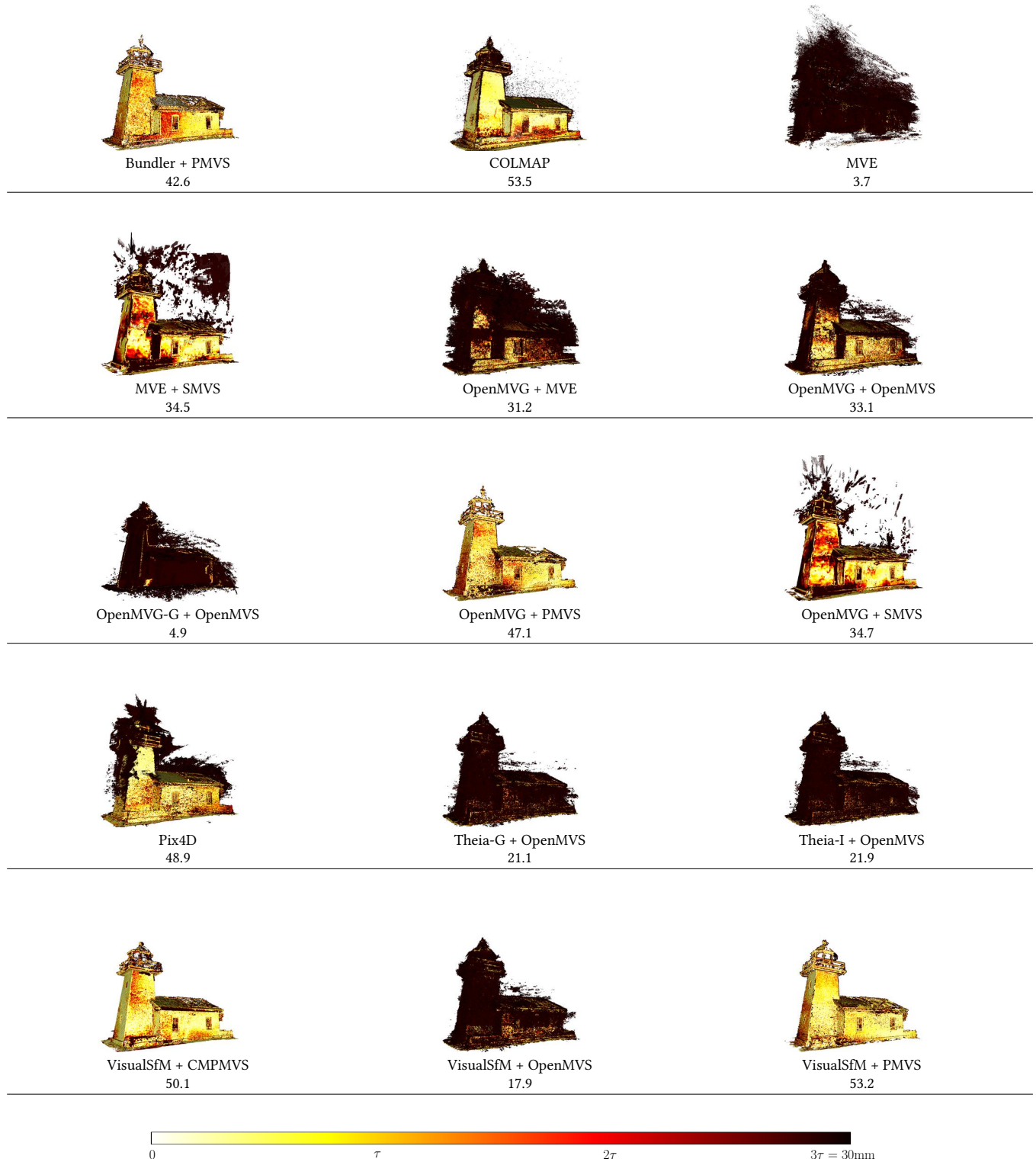


Figure 7. Lighthouse dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 8. Lighthouse dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

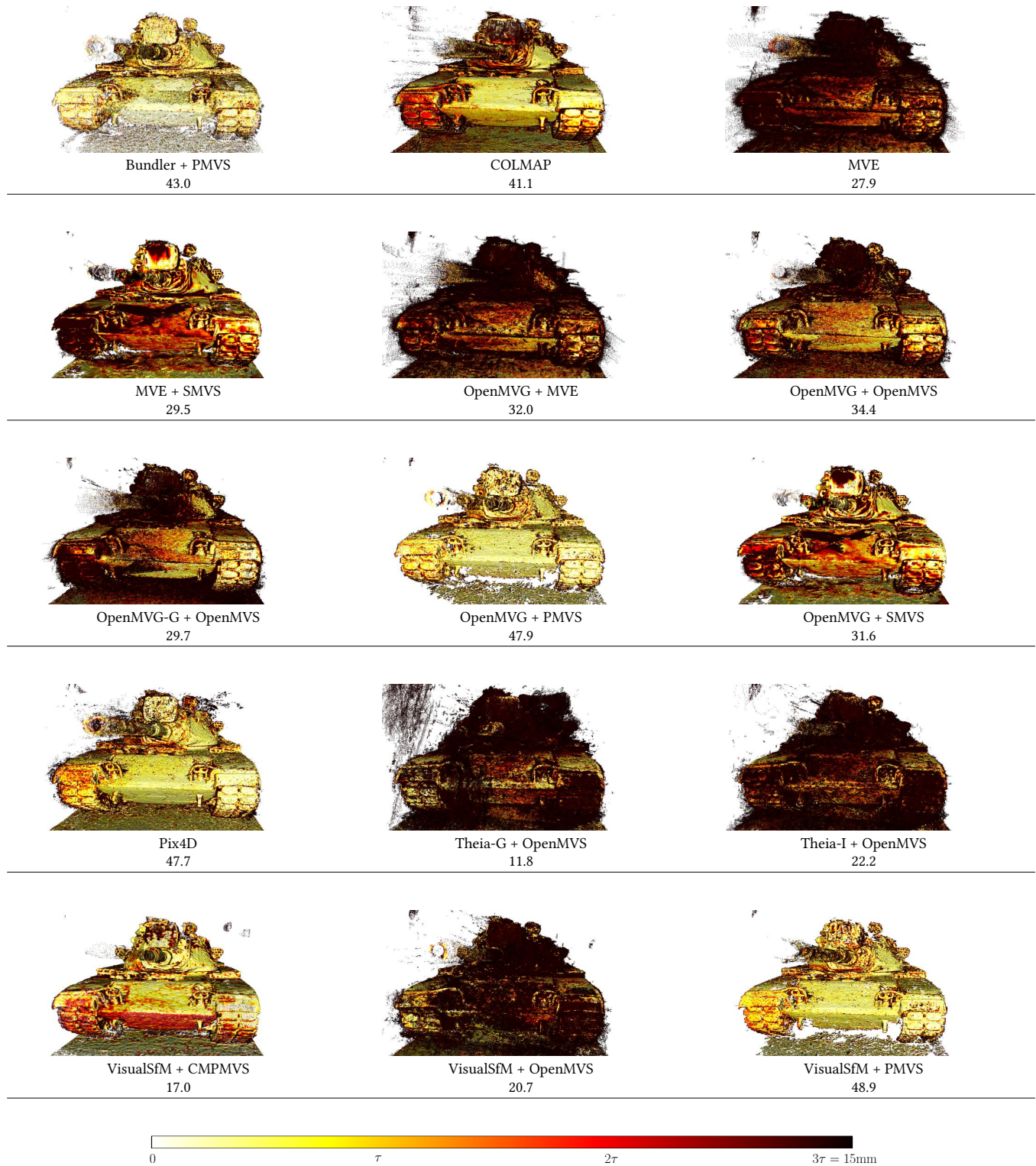


Figure 9. M60 dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Bundler + PMVS
16.5



COLMAP
49.3



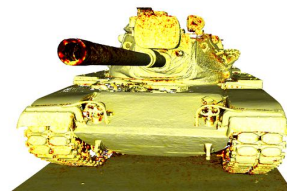
MVE
68.6



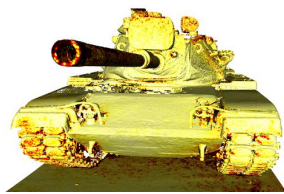
MVE + SMVS
41.1



OpenMVG + MVE
73.2



OpenMVG + OpenMVS
63.8



OpenMVG-G + OpenMVS
59.1



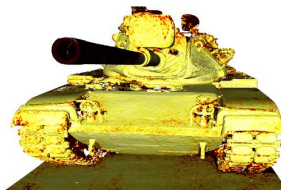
OpenMVG + PMVS
28.7



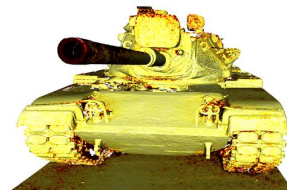
OpenMVG + SMVS
43.2



Pix4D
53.8



Theia-G + OpenMVS
26.2



Theia-I + OpenMVS
48.2



VisualSfM + CMPMVS
9.3



VisualSfM + OpenMVS
39.1



VisualSfM + PMVS
27.8



Figure 10. M60 dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

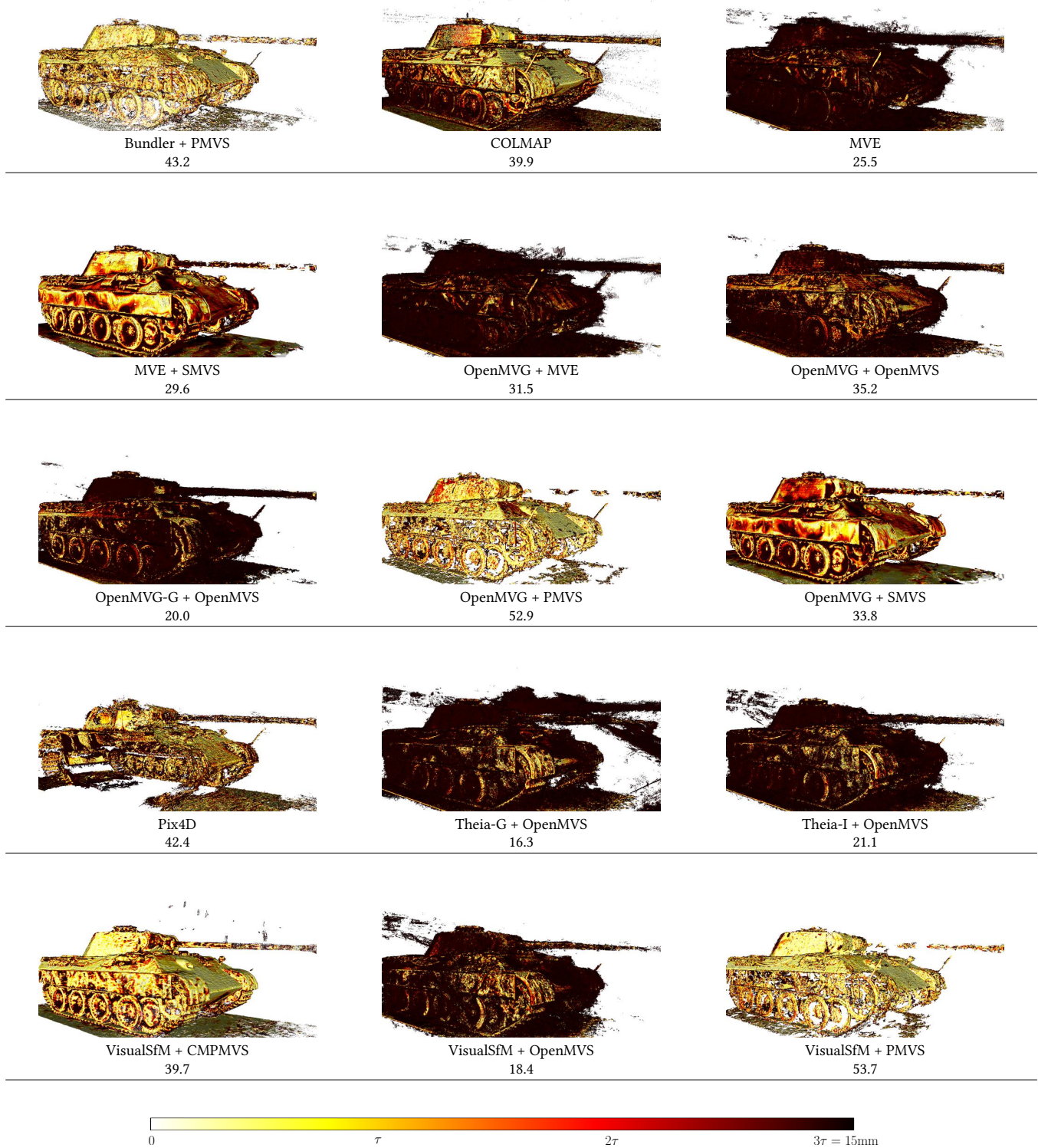


Figure 11. Panther dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 12. Panther dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.



Figure 13. Playground dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 14. Playground dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

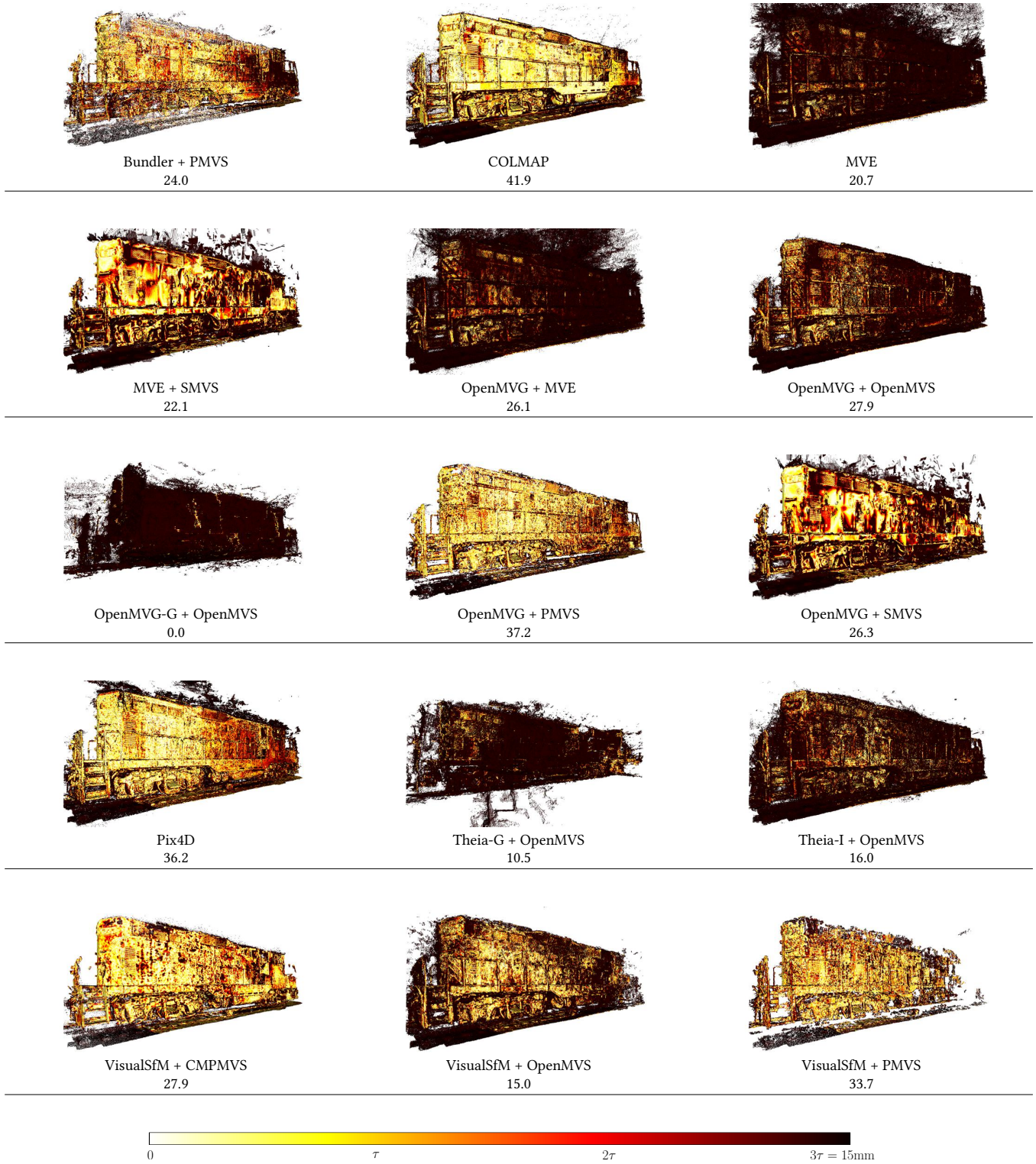


Figure 15. Train dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 16. Train dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

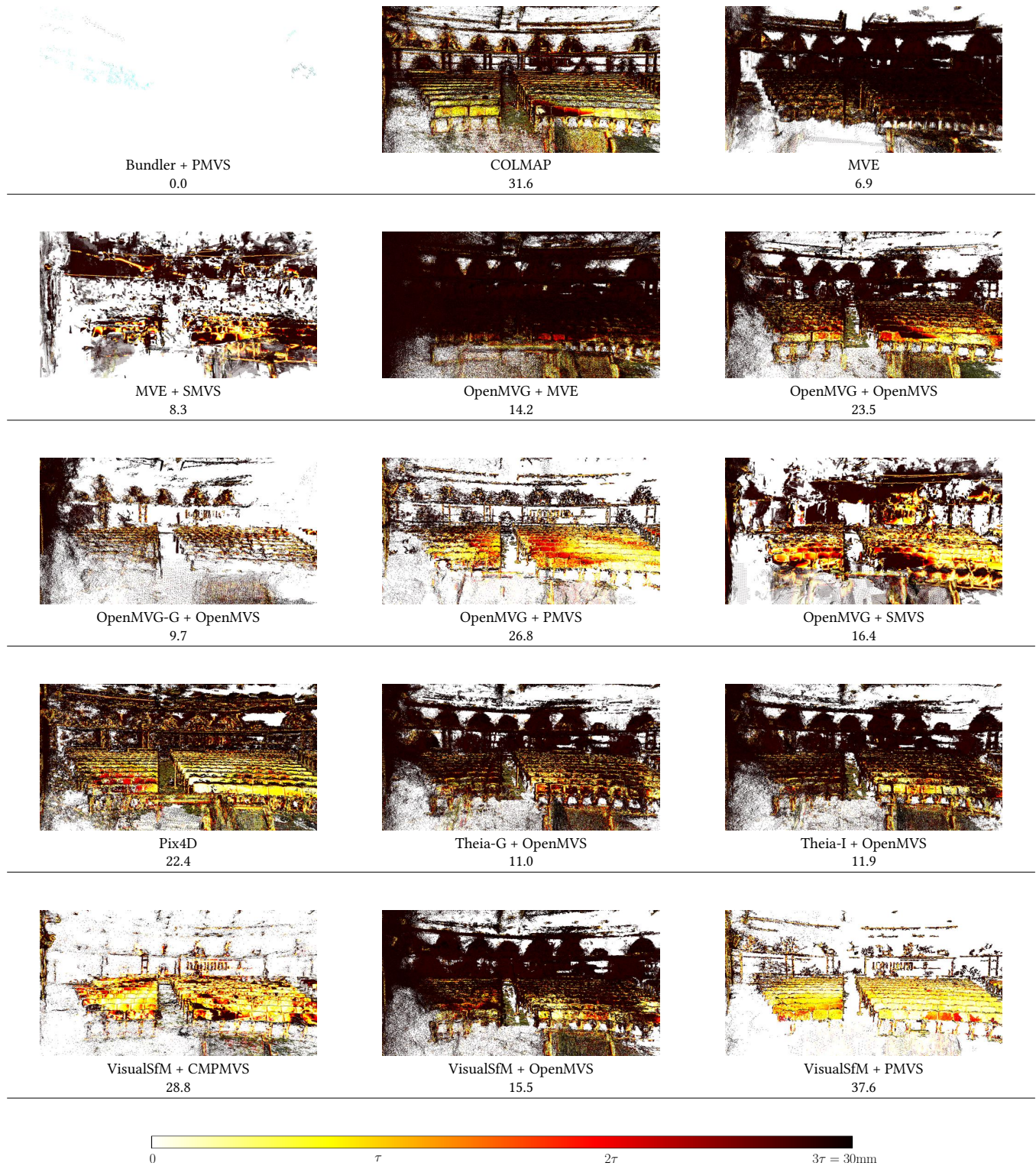


Figure 17. Auditorium dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.



Figure 18. Auditorium dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

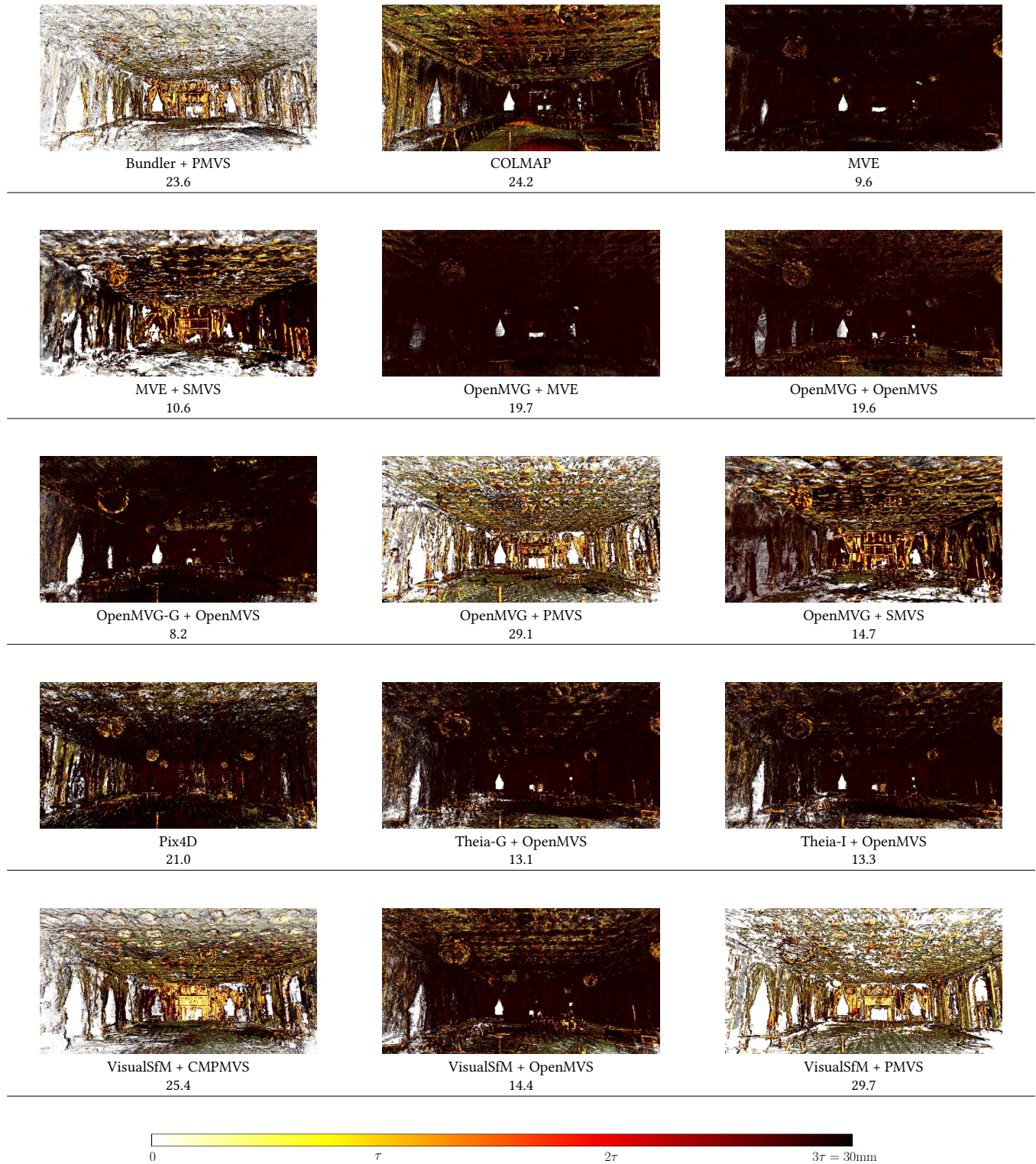


Figure 19. Ballroom dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.

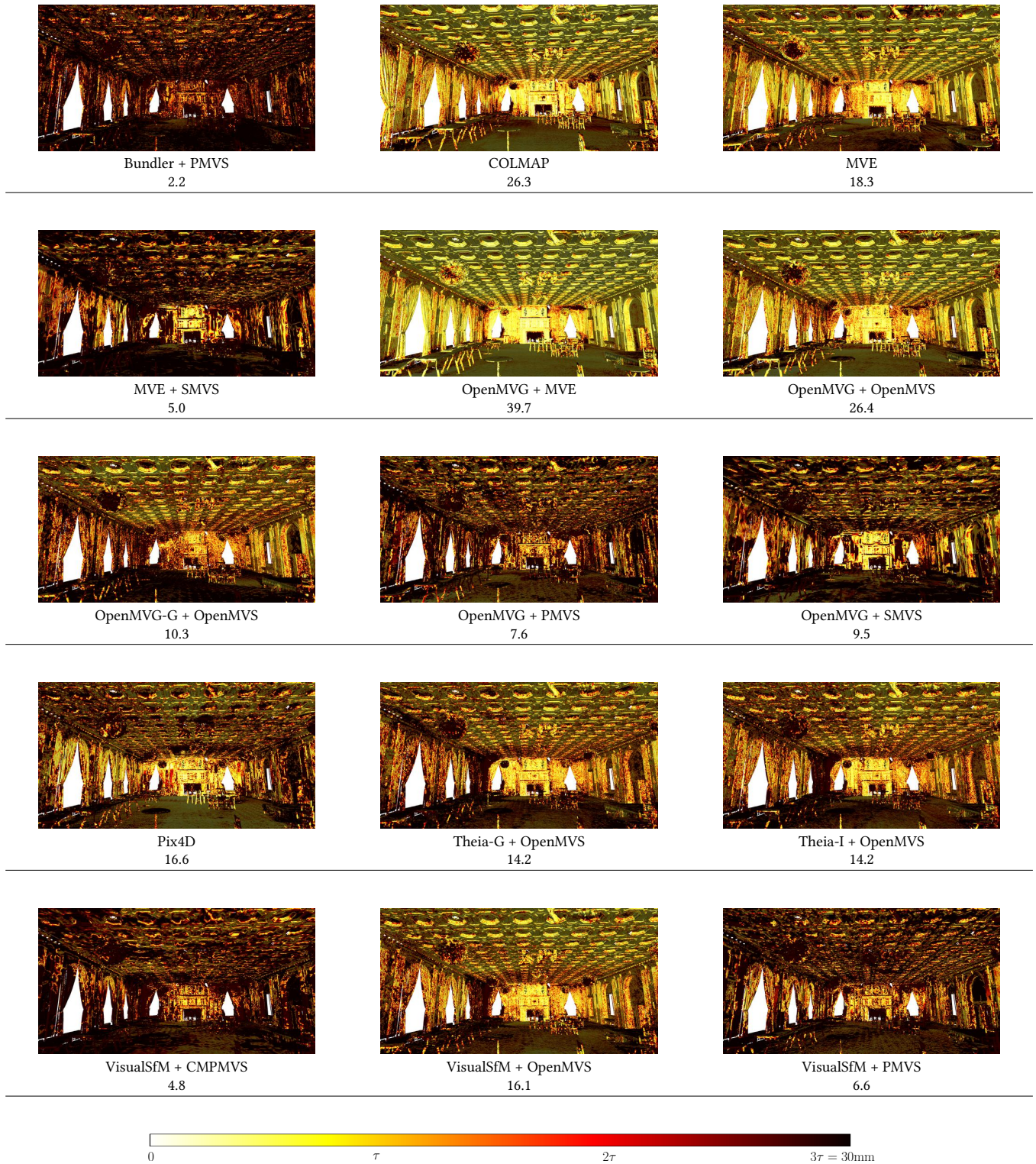


Figure 20. Ballroom dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

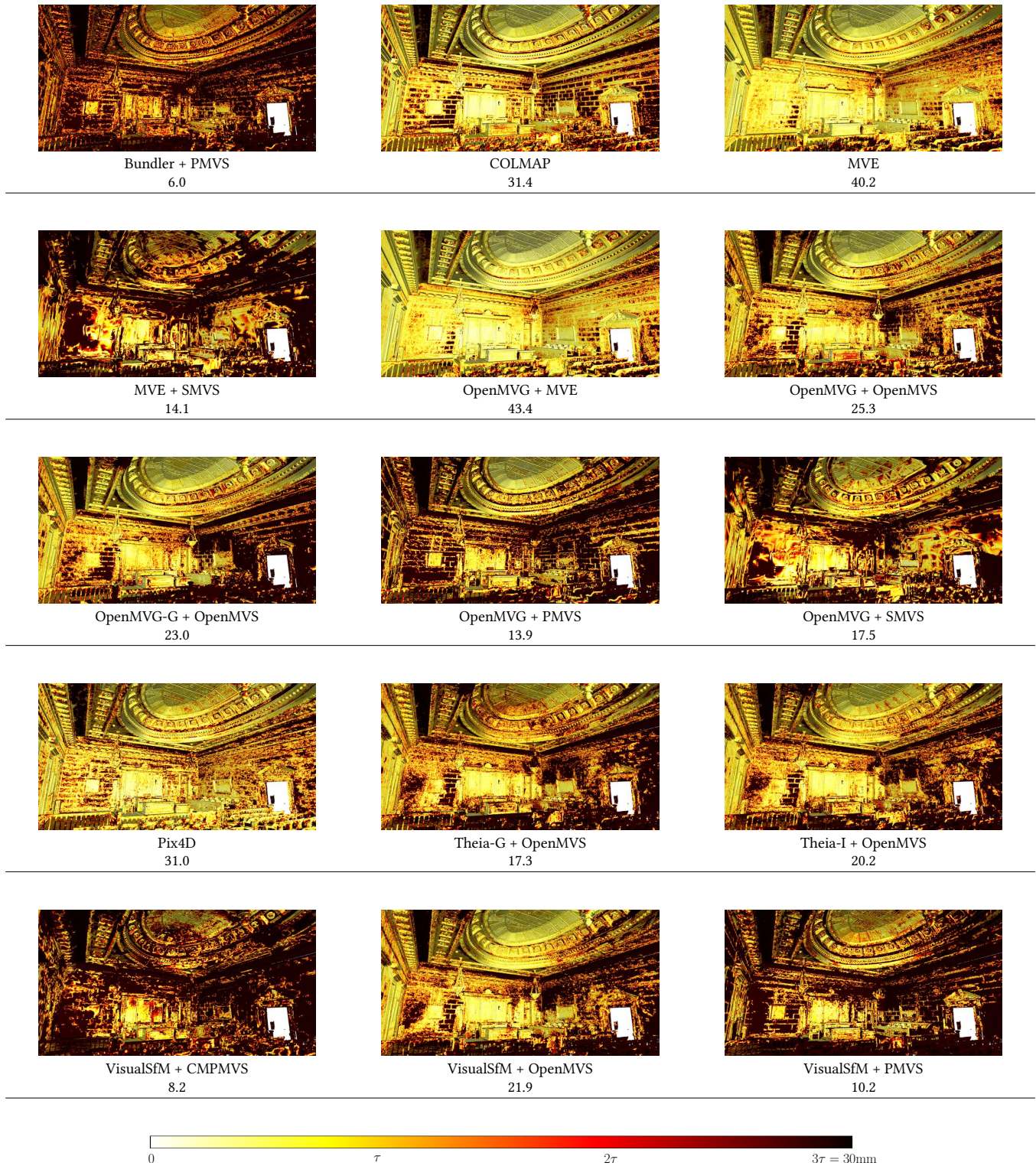


Figure 22. Courtroom dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.



Figure 24. Museum dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

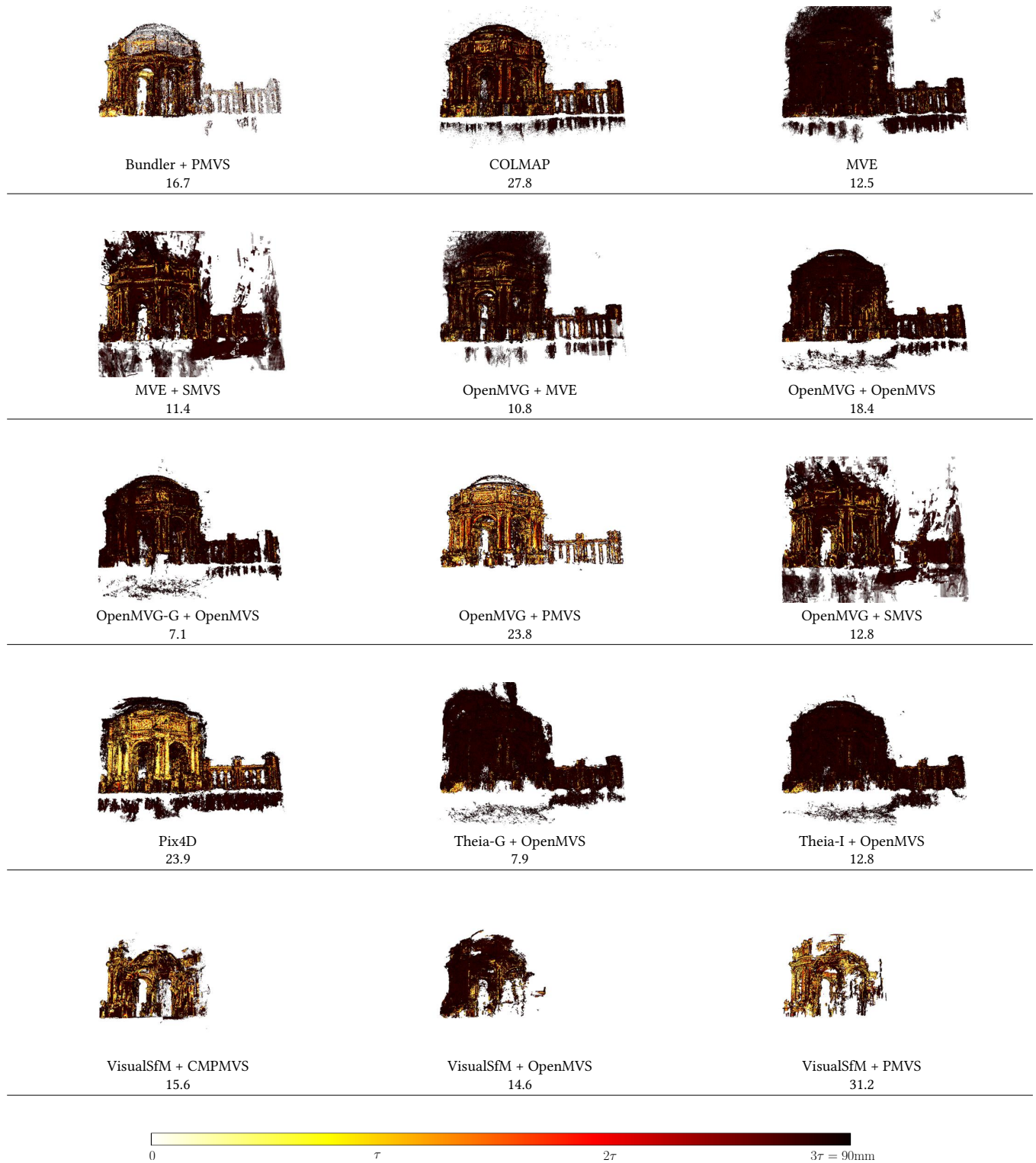


Figure 25. Palace dataset. For each technique, we show the reconstructed point set, with distance to the ground-truth model coded by color. The number listed for each technique is $P(\tau)$.

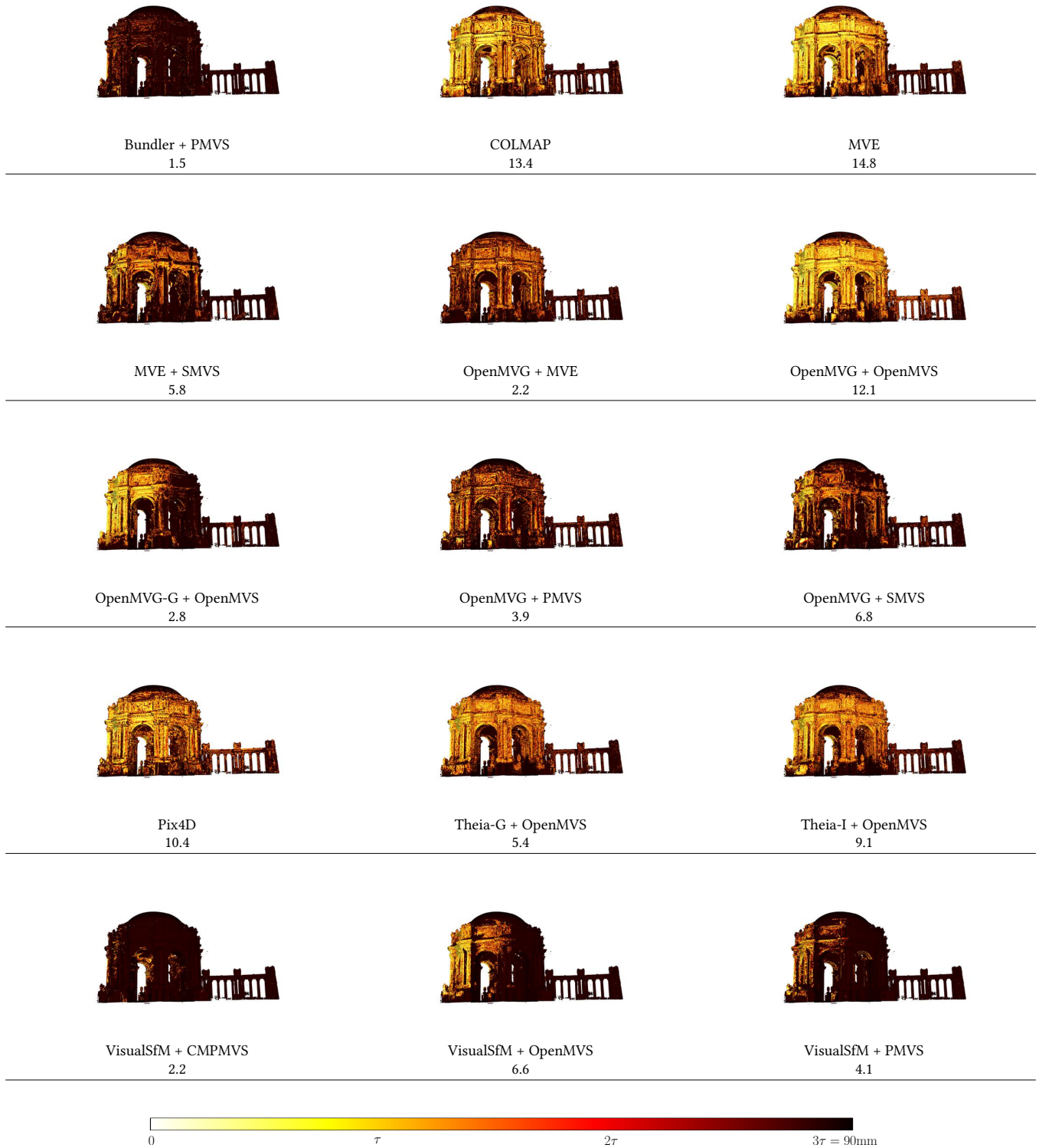


Figure 26. Palace dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

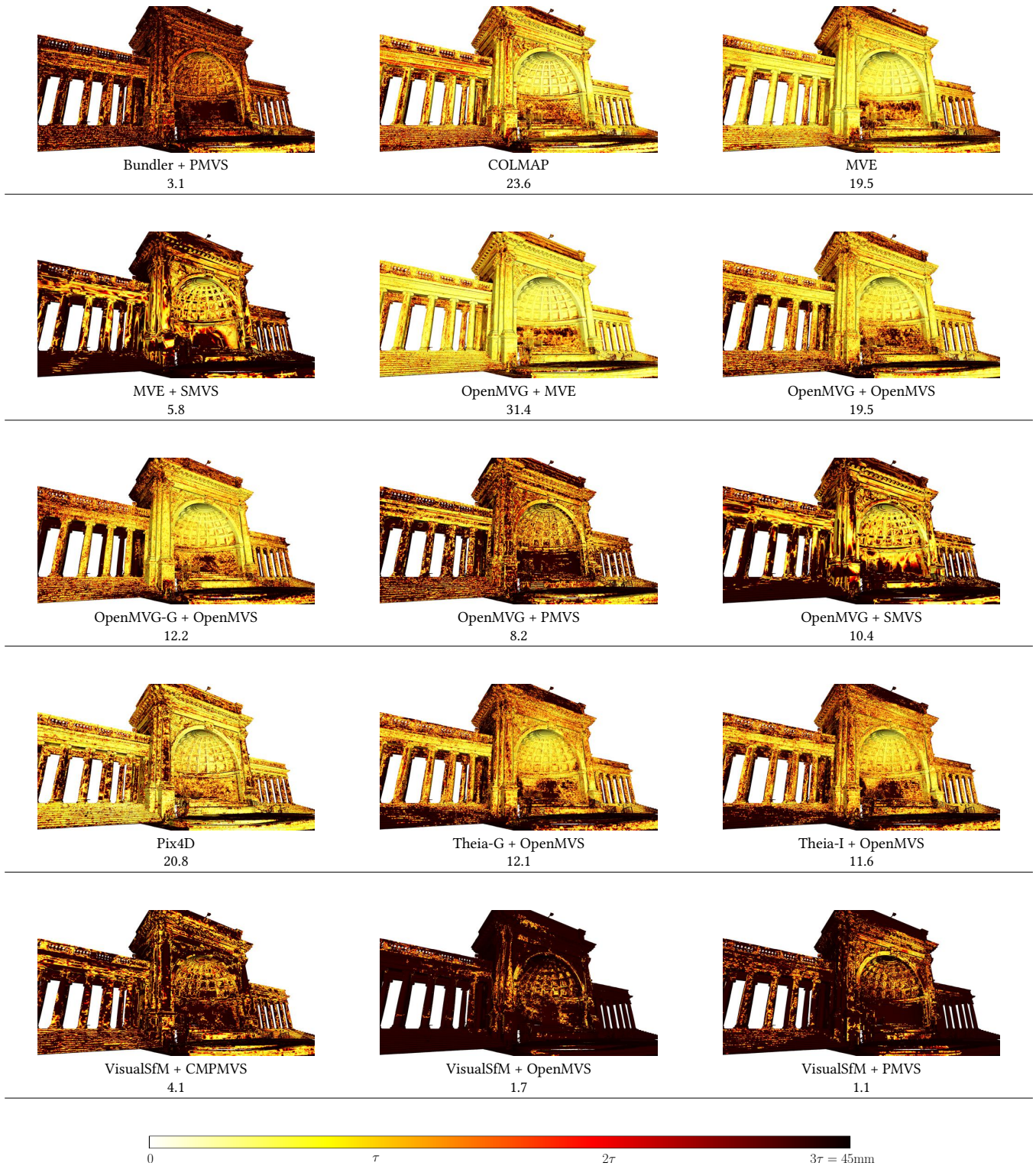


Figure 28. Temple dataset. For each technique, we show the ground-truth point set, with distance to the reconstructed model coded by color. The number listed for each technique is $R(\tau)$.

