



Spatiotemporal Variance-Guided Filtering for Motion Blur

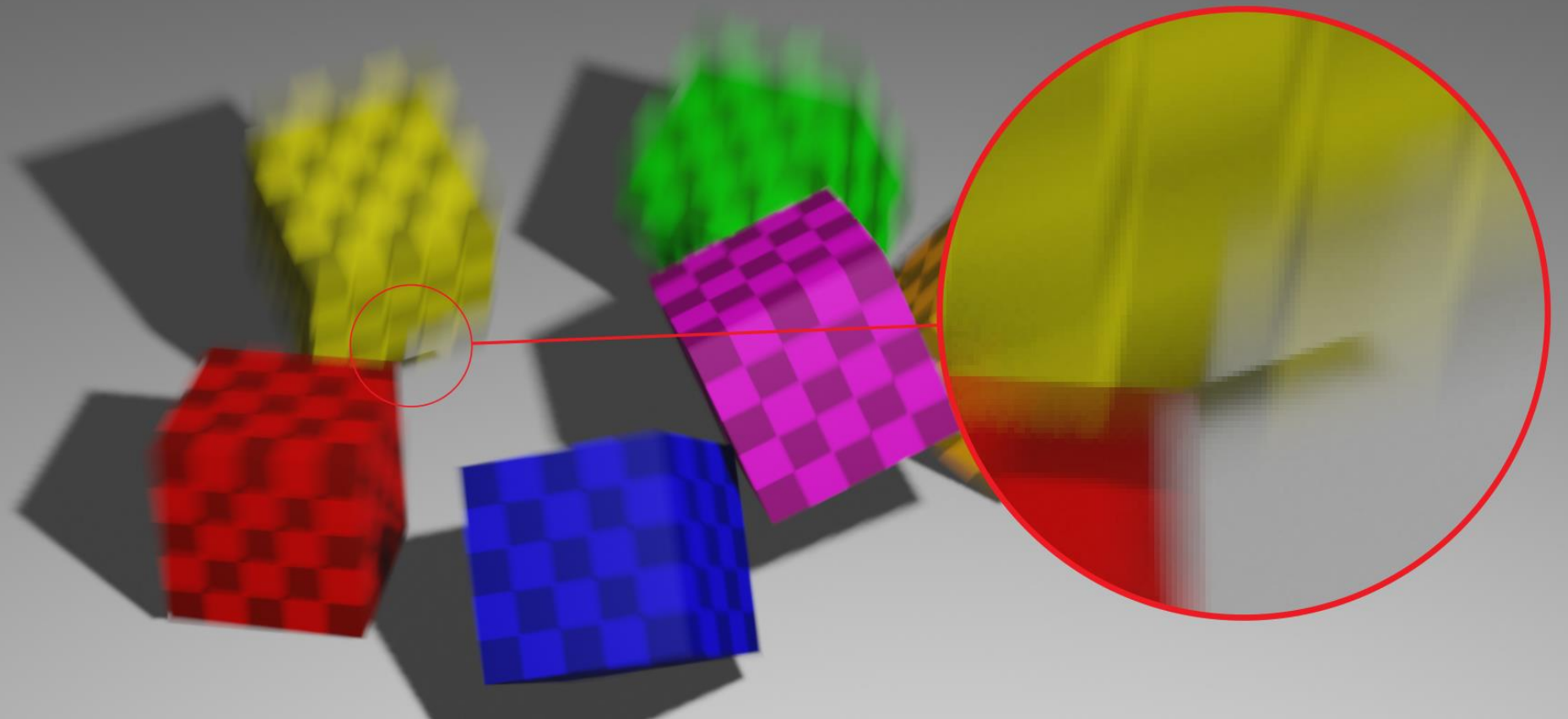
Max Oberberger, Matthäus Chajdas,
Rüdiger Westermann



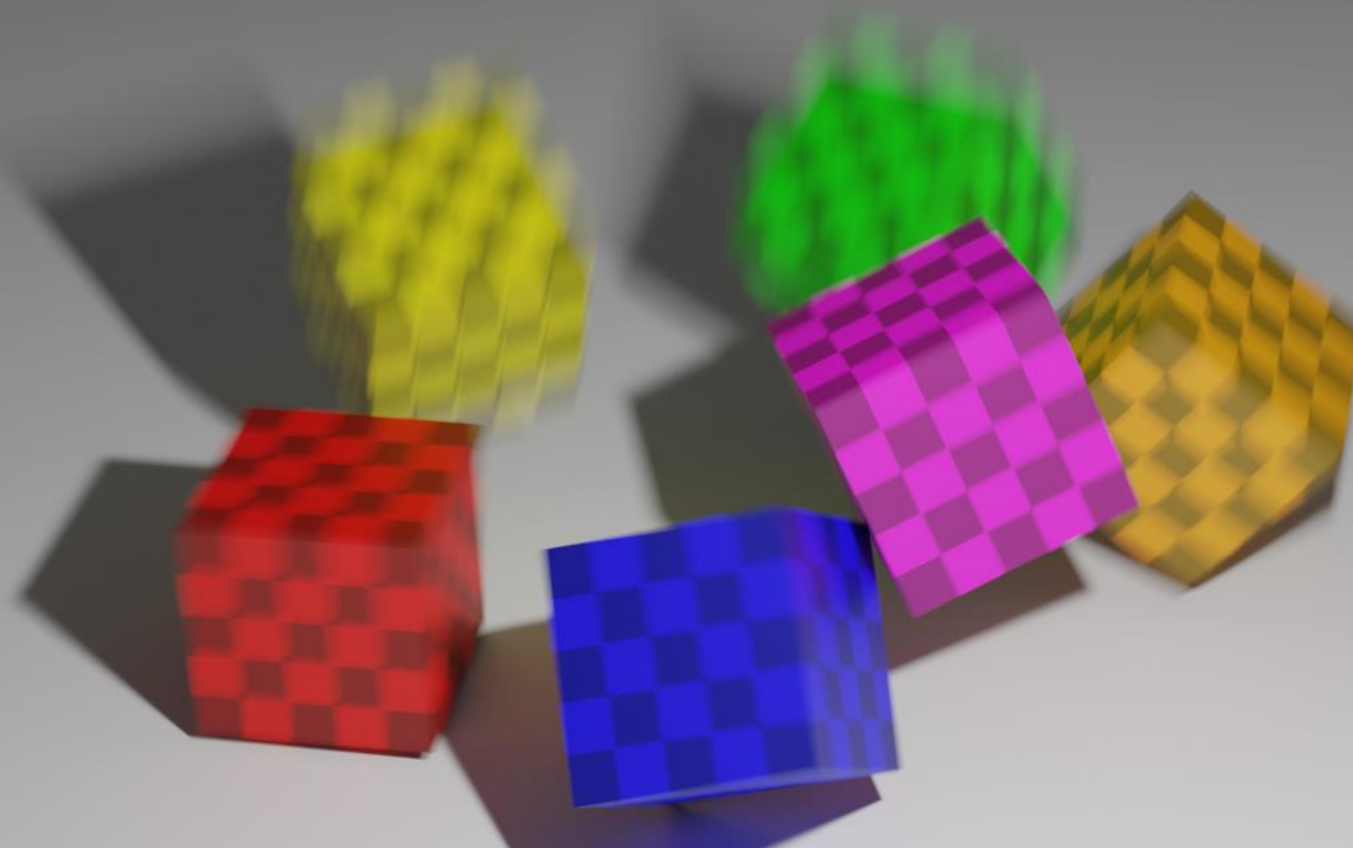
Motion Blur



Post Process Motion Blur

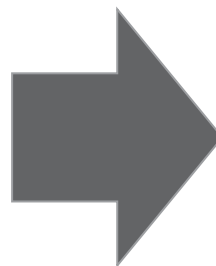


Ray-Traced Motion Blur



Fast and High-quality?

Spatiotemporal Variance-Guided Filtering



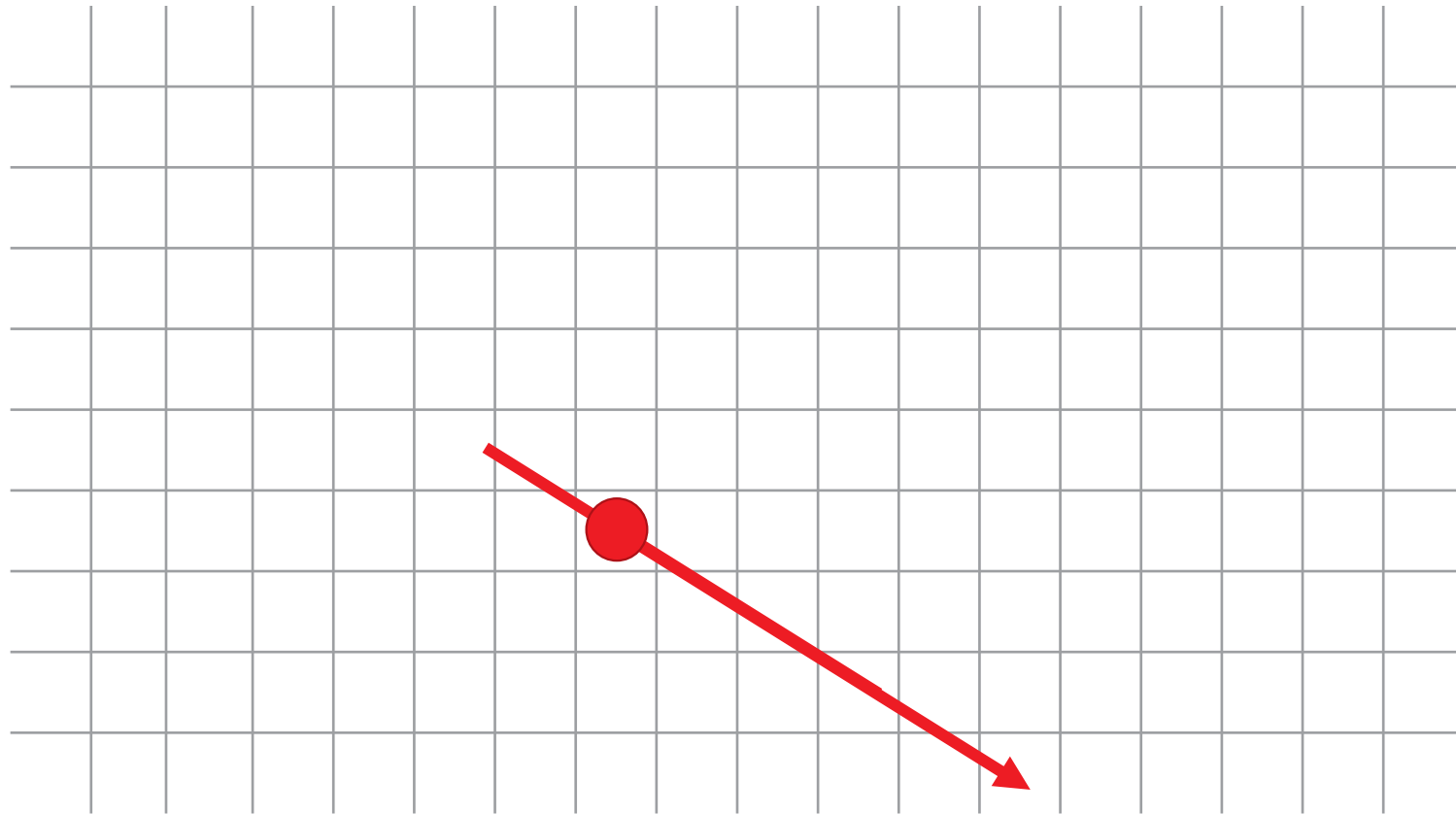
Spatiotemporal Variance-Guided Filtering



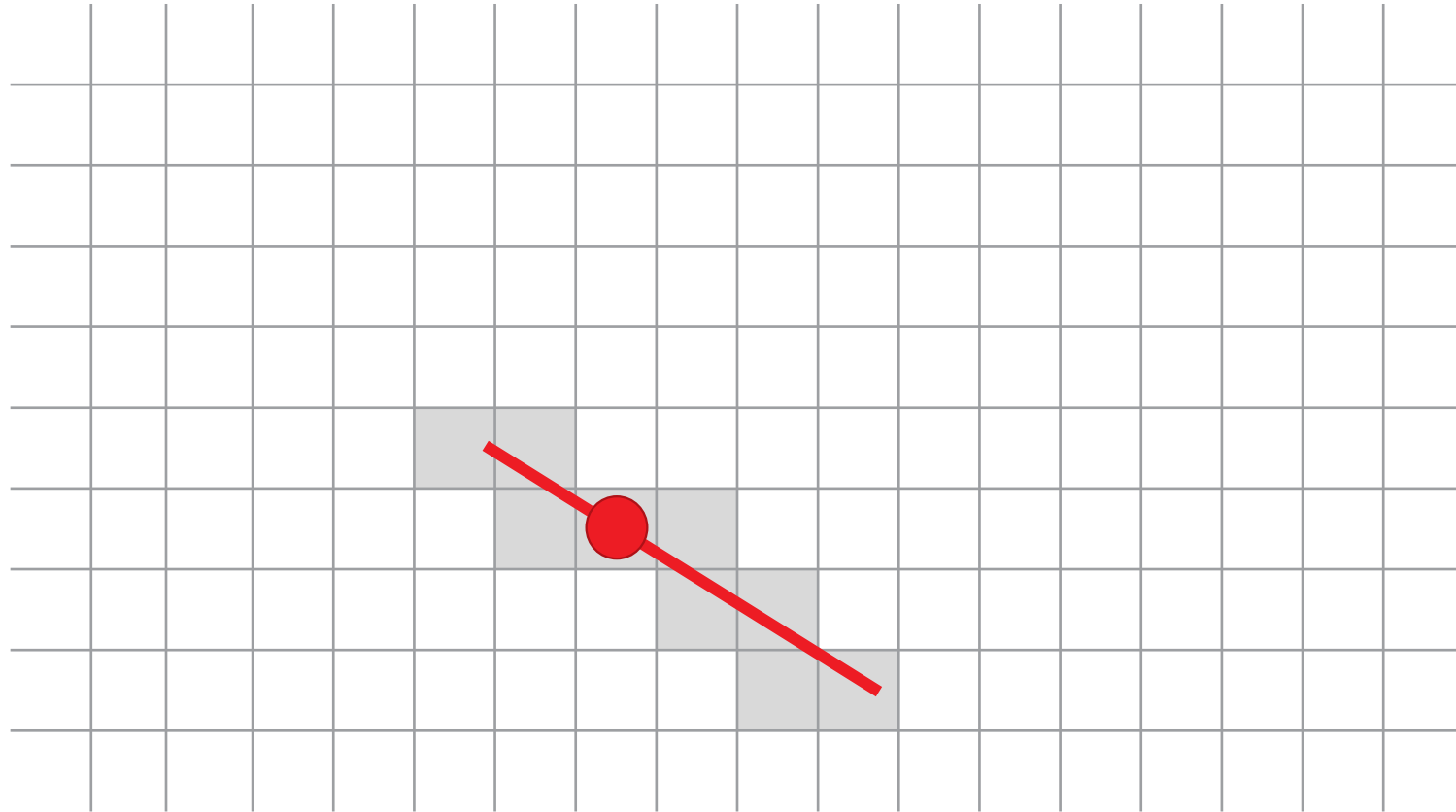
Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering

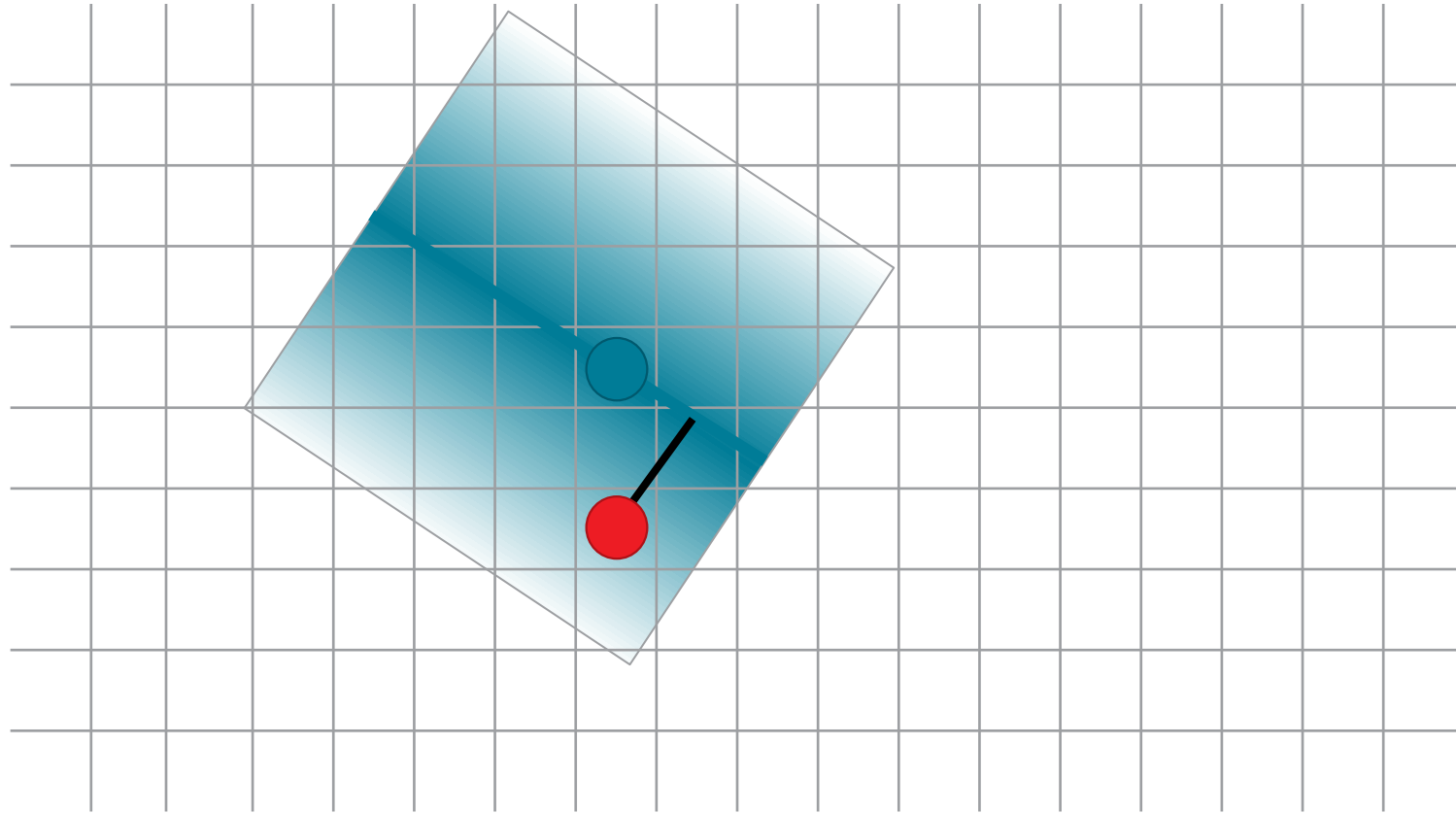


Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering

Weight Function



Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering

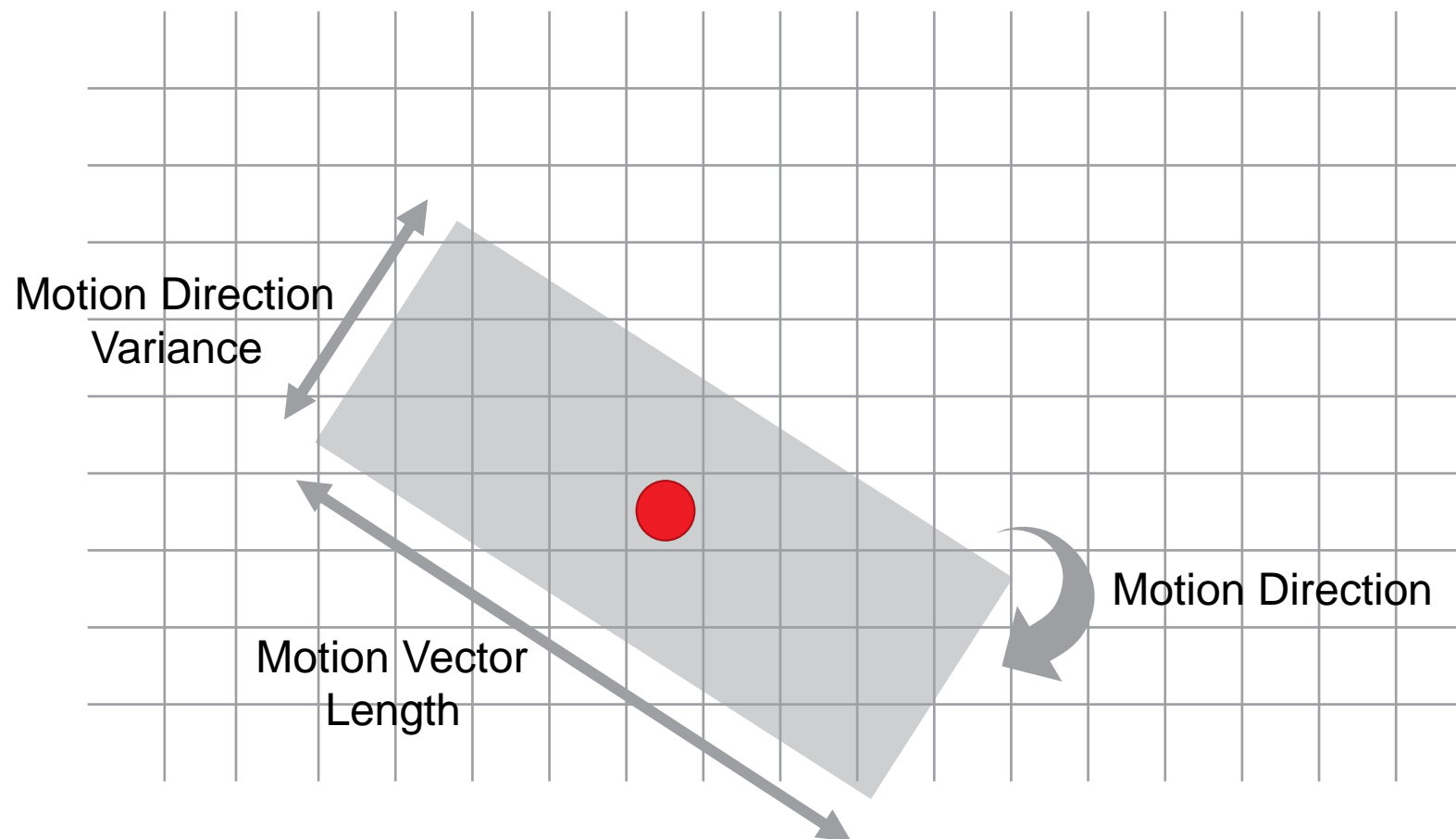


Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering

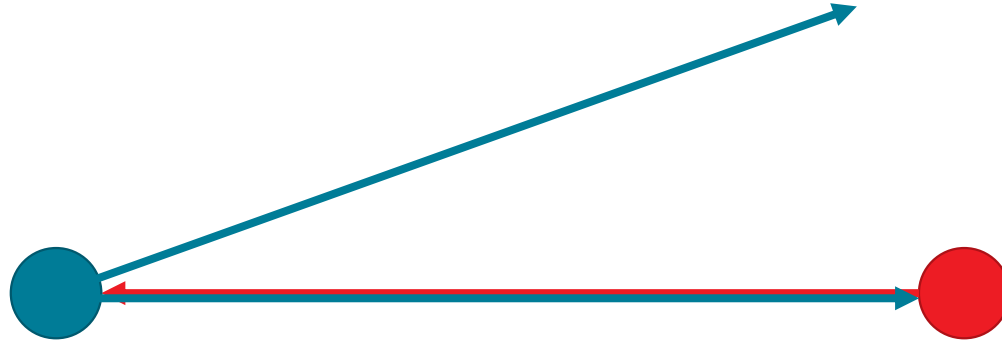
Search Window



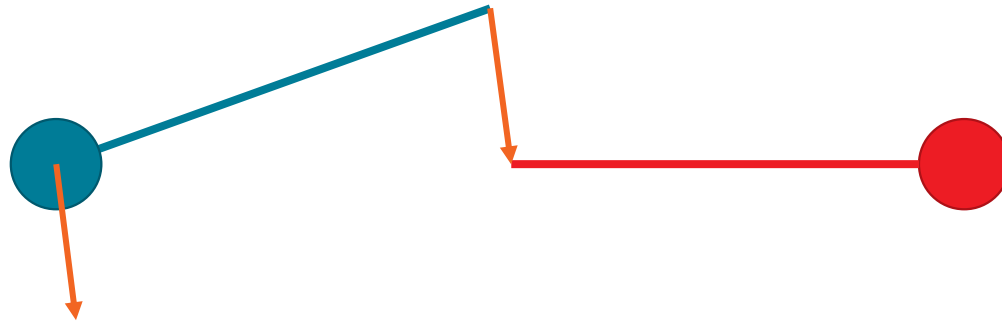
Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering



Spatiotemporal Variance-Guided Filtering

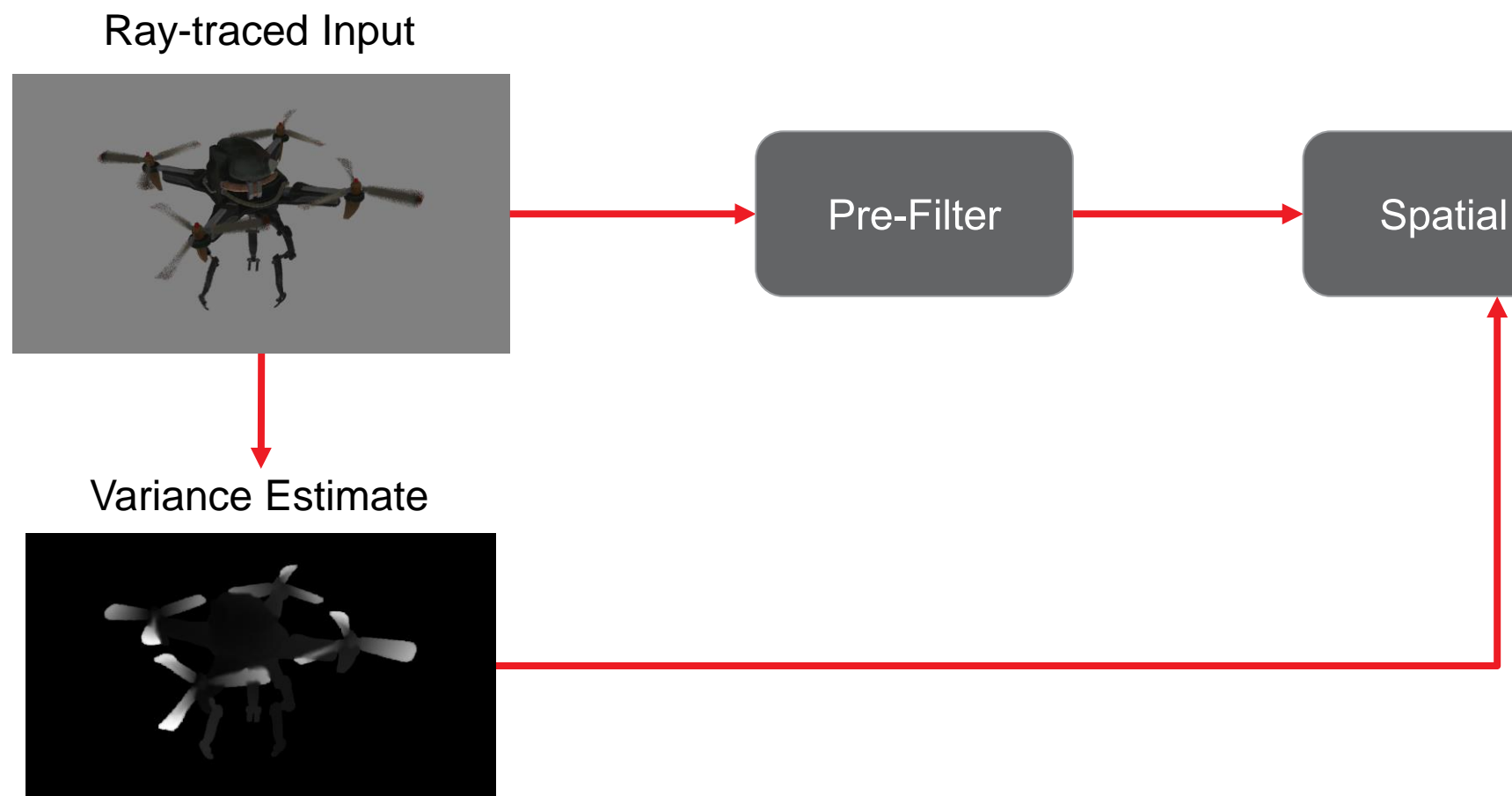


Spatiotemporal Variance-Guided Filtering



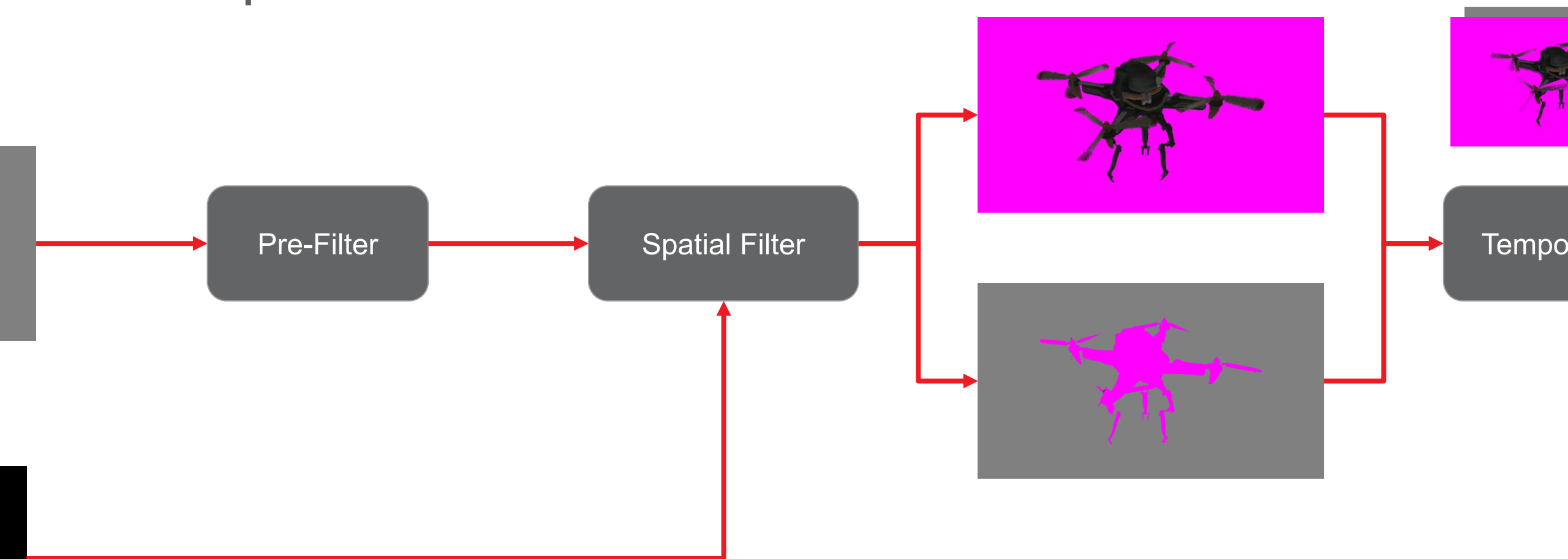
Spatiotemporal Variance-Guided Filtering

The Complete Picture



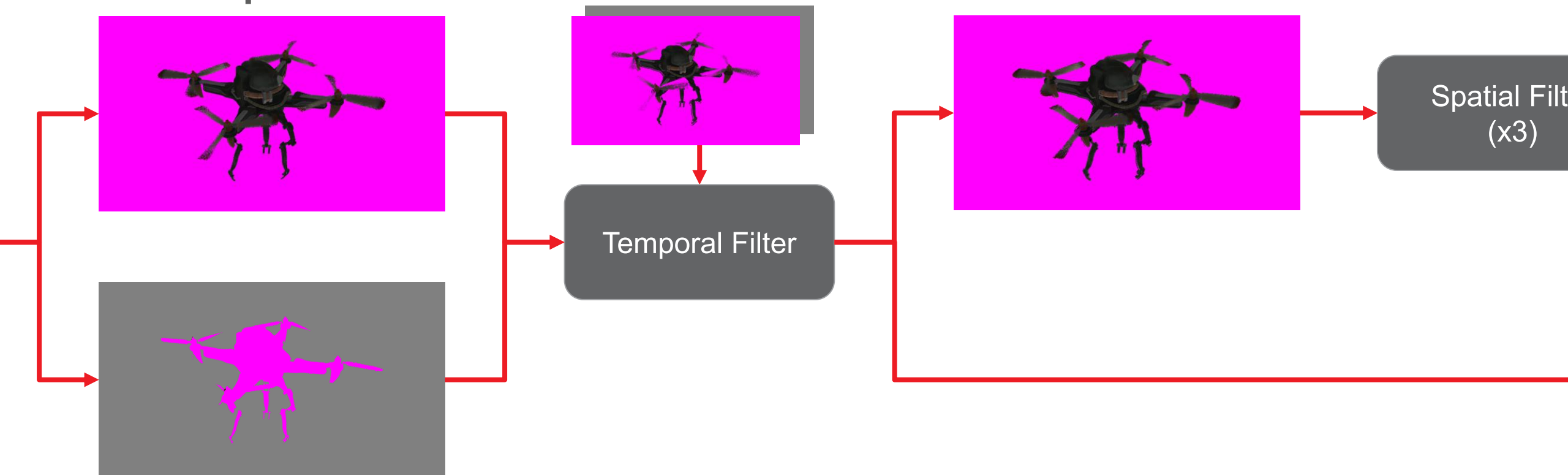
Spatiotemporal Variance-Guided Filtering

The Complete Picture



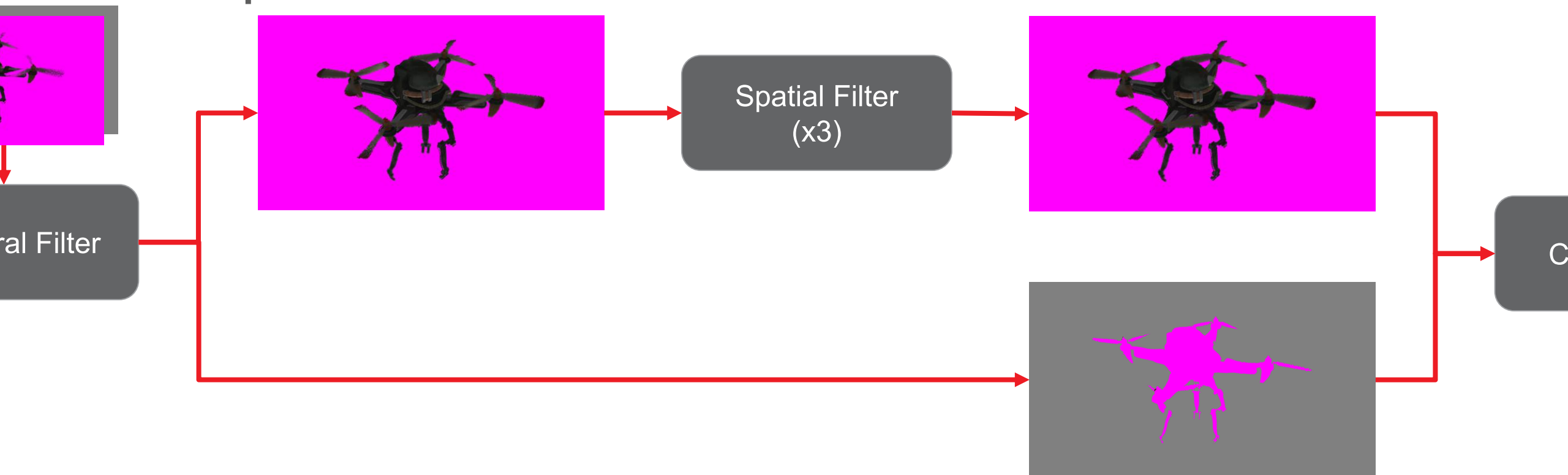
Spatiotemporal Variance-Guided Filtering

The Complete Picture



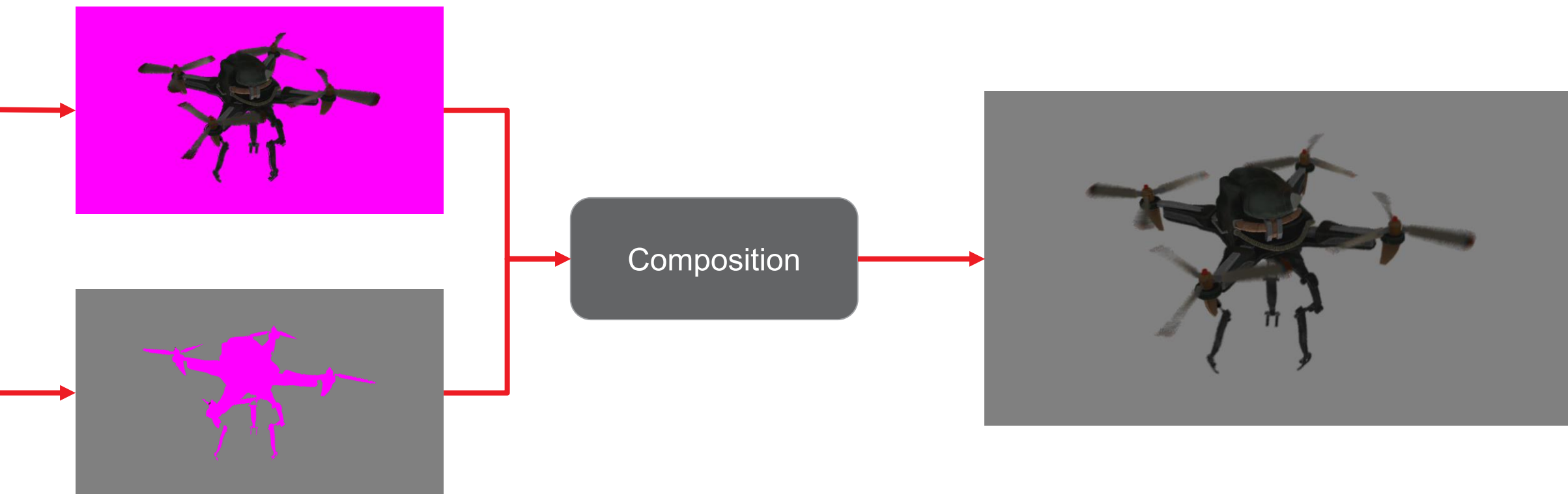
Spatiotemporal Variance-Guided Filtering

The Complete Picture



Spatiotemporal Variance-Guided Filtering

The Complete Picture



Results





Filter



Filter

Reference



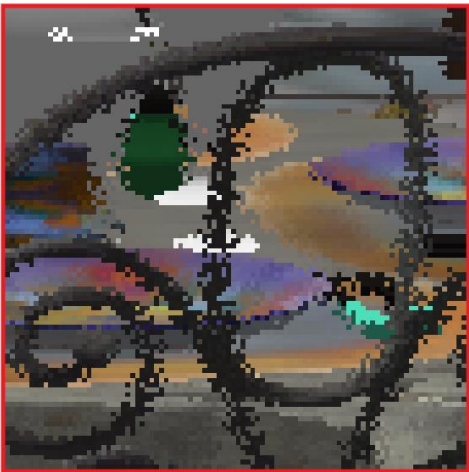
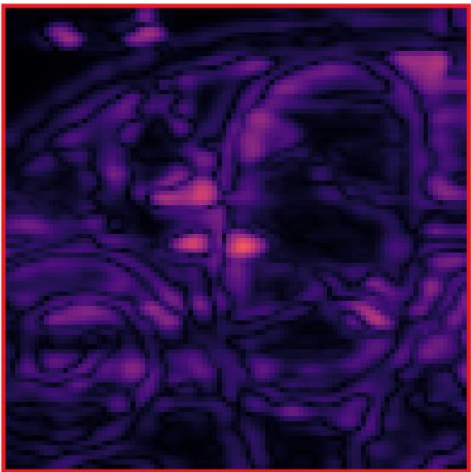
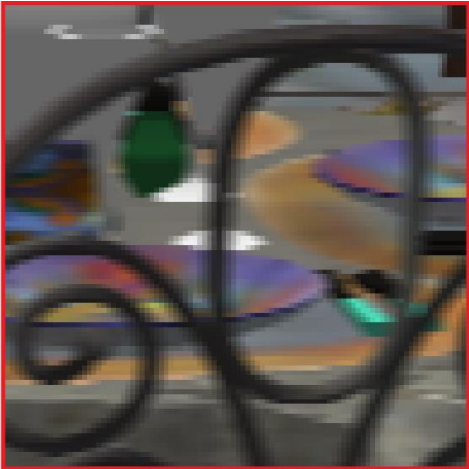
FLIP Error

Results



Ours

4096spp



FLIP

1spp

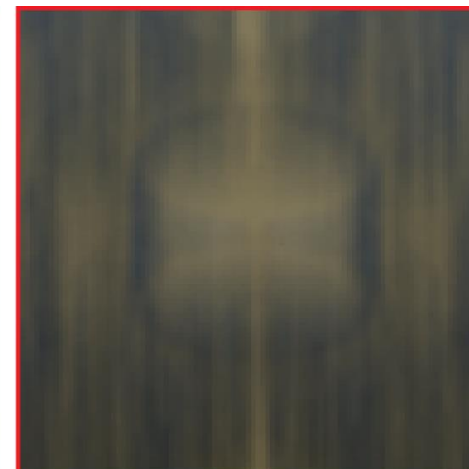
Results



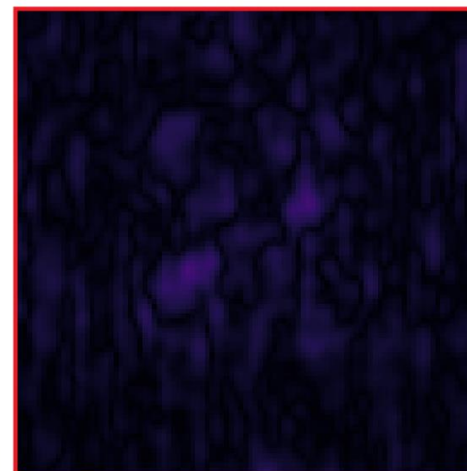
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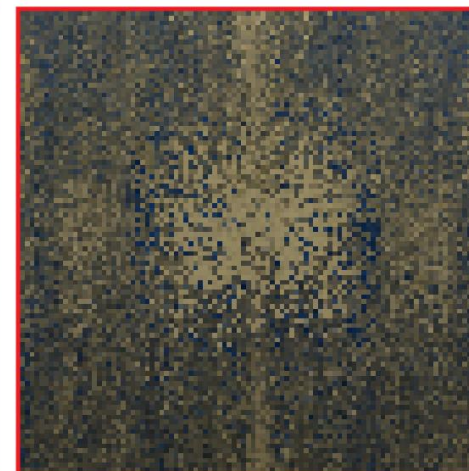
4096spp



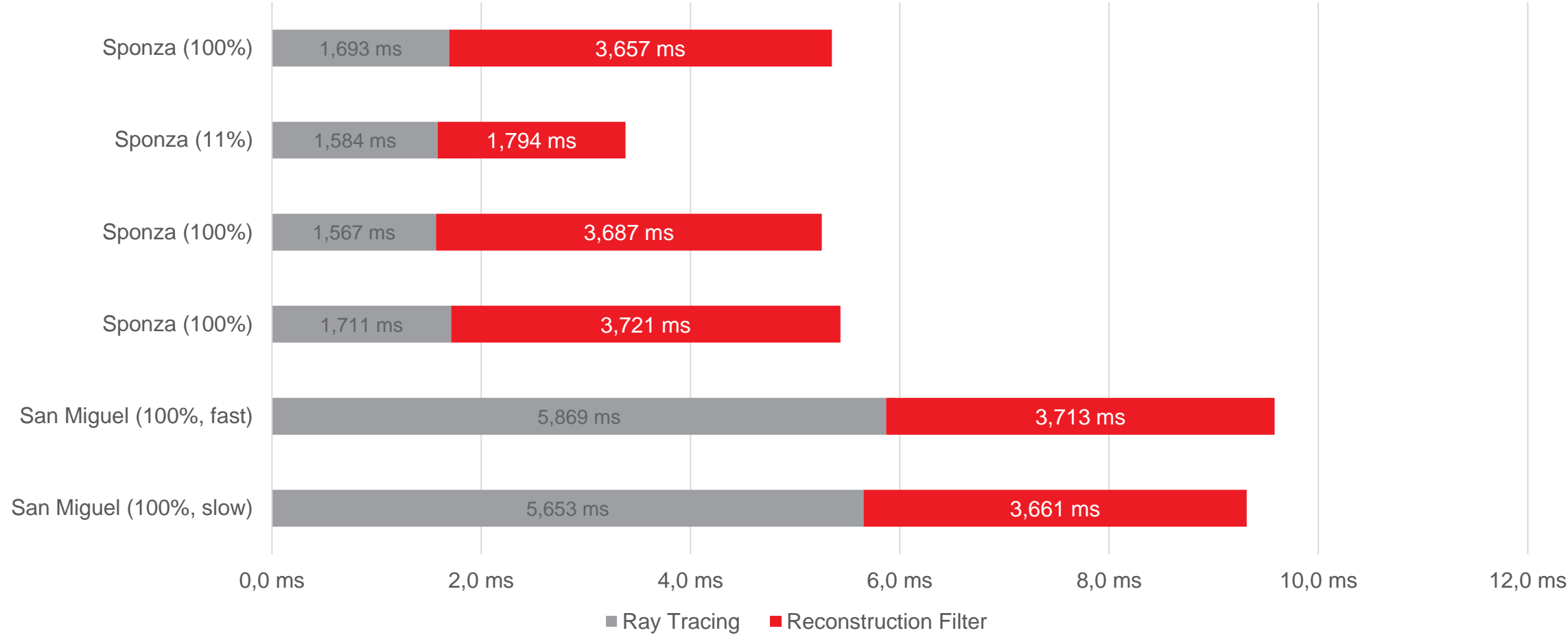
FLIP



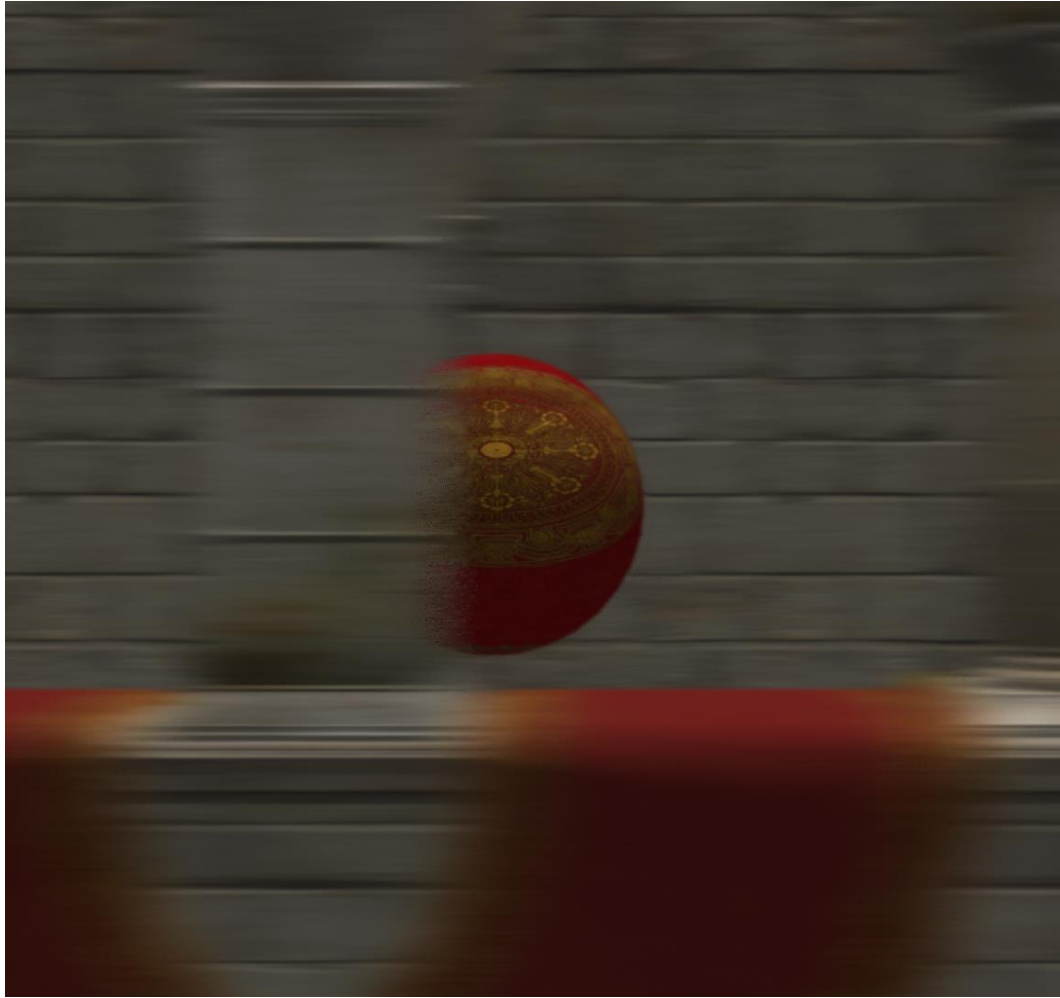
1spp



Performance



Measurements @ 1920x1080 on AMD RX 6800 XT



Conclusion

- Reduced Variance
- Temporally Stable
- Real-time Performance



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