

Real-Time Global Illumination for Dynamic Scenes

Conclusions



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Comparison

- Many different techniques
- Different pros and cons
 - Semi-dynamic / fully dynamic
 - Small scenes / large scenes
 - Screen-space / object-space
 - Accurate / approximate visibility
 - One bounce / multiple bounces
 - Diffuse / glossy bounces
 - Fast / slow computation times

	Dynamic Scenes	Scene Size	Space	Visibility	Indirect Bounces	Diffuse / Glossy	Render Speed
Instant Radiosity	Yes	Small	Object	Accurate	∞	Diffuse	Scene-Size-Dep.
Increm. Inst. Rad.	No	Large	Object	Accurate	1	Diffuse	Fast
Imp. Shadow Maps	Yes	Medium	Object	Approx.	1 / more	Diffuse	Fast
Screen-Space AO	Yes	∞	Screen	Approx.	0		Very Fast
SSAO for Ind. Illum.	Yes	∞	Screen	Very Approx.	~ 1	Diffuse	Fast
Refl. Shadow Maps	Yes	Large	Light	None	1	Diffuse	Fast
Splatting Ind. Illum.	Yes	Large	Light / Screen	None	1	Diffuse + Glossy	Fast
Dynamic AO	Yes	Small	Object	AO	several	Diffuse	Medium
Implicit Visibility	Yes	Very Small	Object	Discretized	several	Diffuse + Glossy	Slow
Anti-Radiance	Yes (Limited)	Medium	Object	Iterative	several	Diffuse + Glossy	Slow

Conclusion

- No technique that fits all purposes
 - Depends on application
- Active area of research
 - Development continues

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