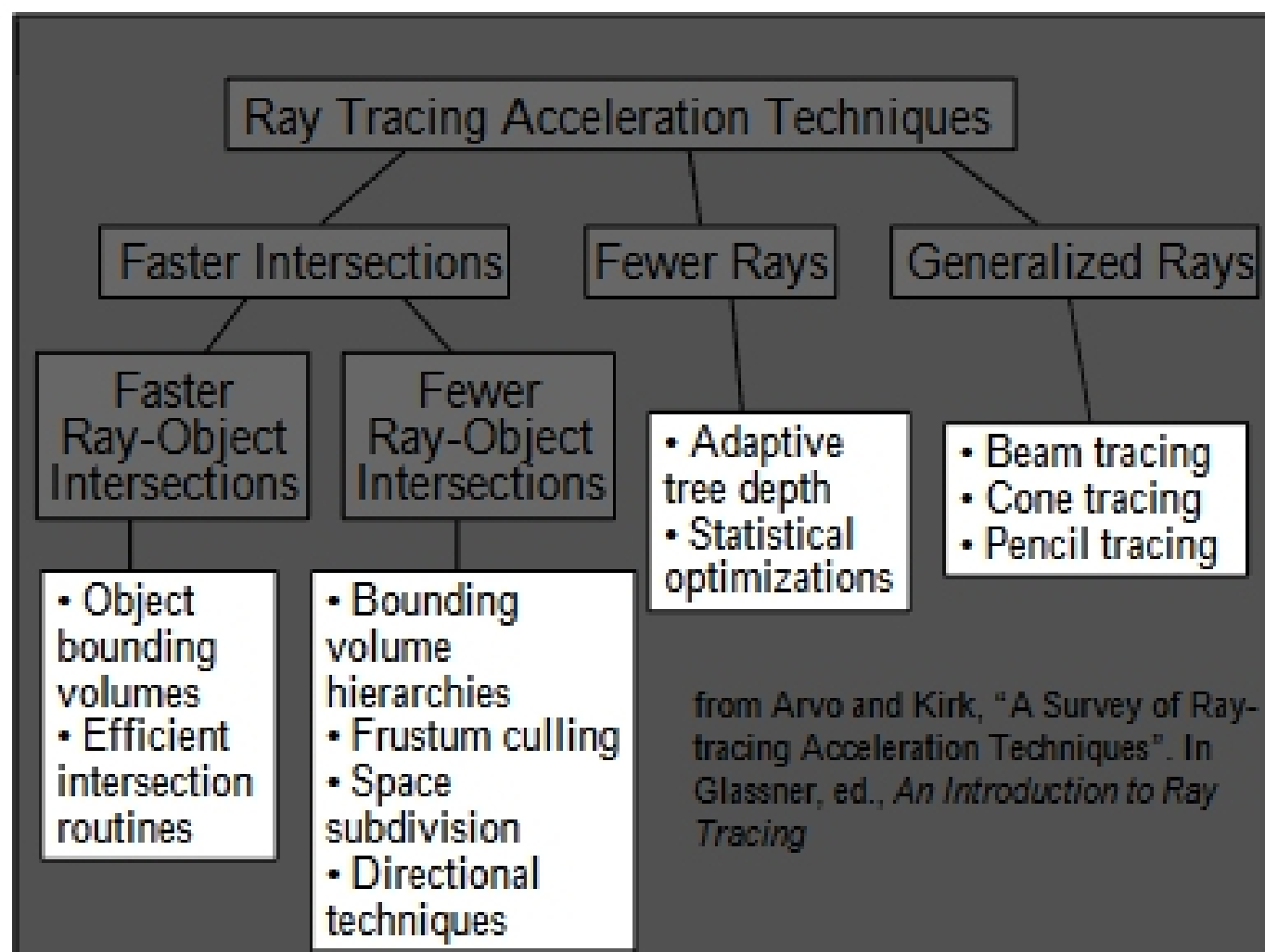




# Accelerating Ray Tracing

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## Bounding Volumes

Simple volume description guaranteed to contain a more complex volume description

Test ray against more complex primitive only if it intersects bounding volume

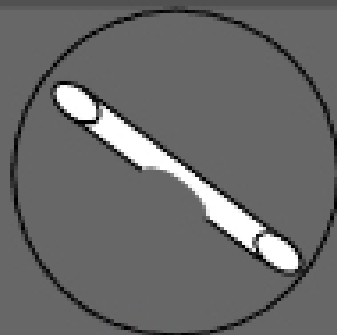
Increases time for hits, but reduces time when ray misses bounding volume

Provide bounds on interval of intersection

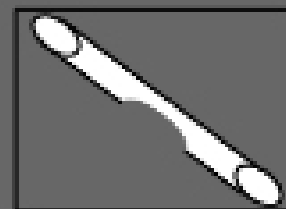
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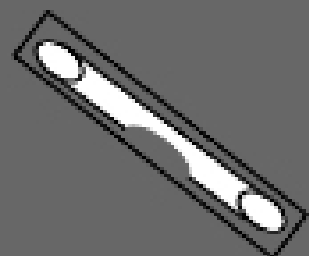
## Bounding Volume Examples



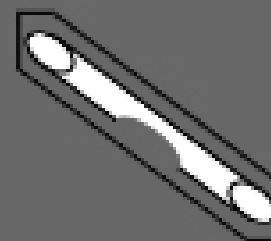
Sphere



Axis-Aligned Bounding Box



Oriented Bounding Box



General Slab Intersection



## **Bounding Volume Hierarchies**

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**Cluster bounding volumes hierarchically**

**Only intersect ray with child volume if it intersects parent**

**Reduces number of ray-volume and ray-object intersection tests**

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## **Bounding Volume Hierarchy Example**

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