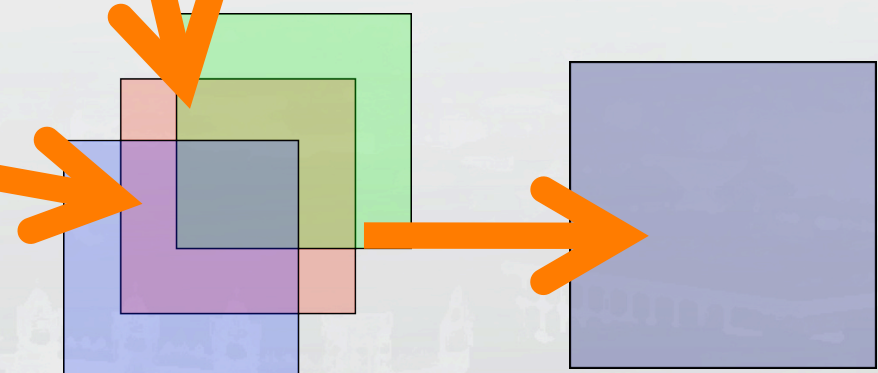
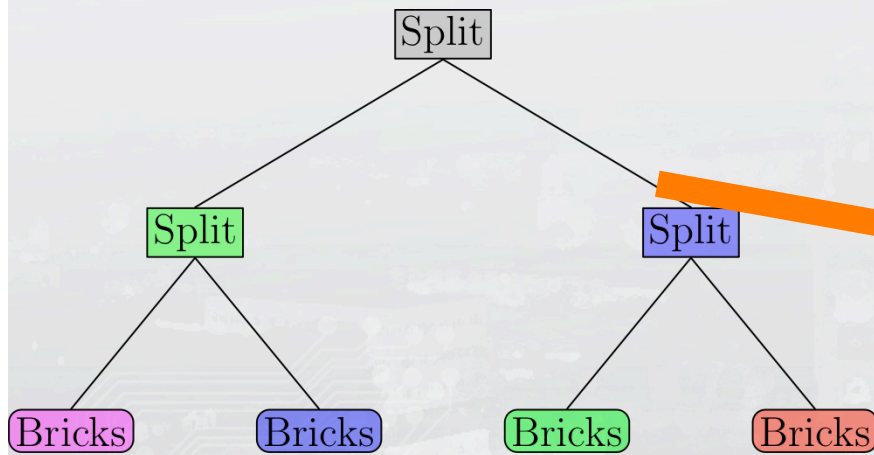
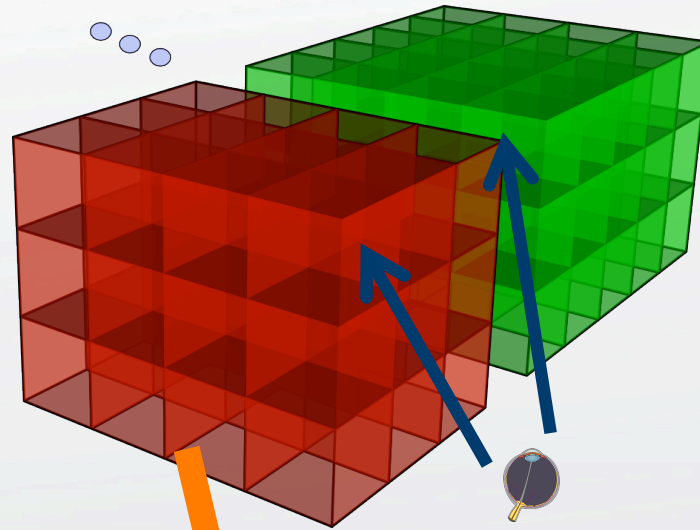
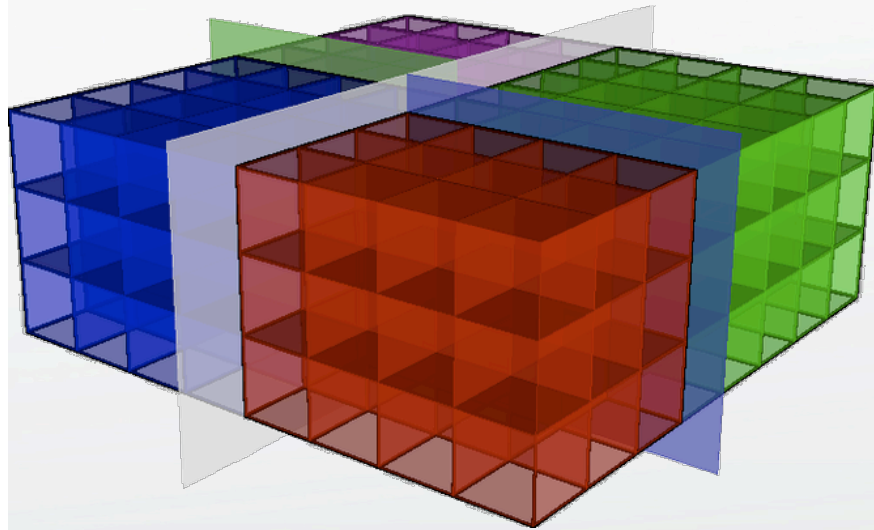
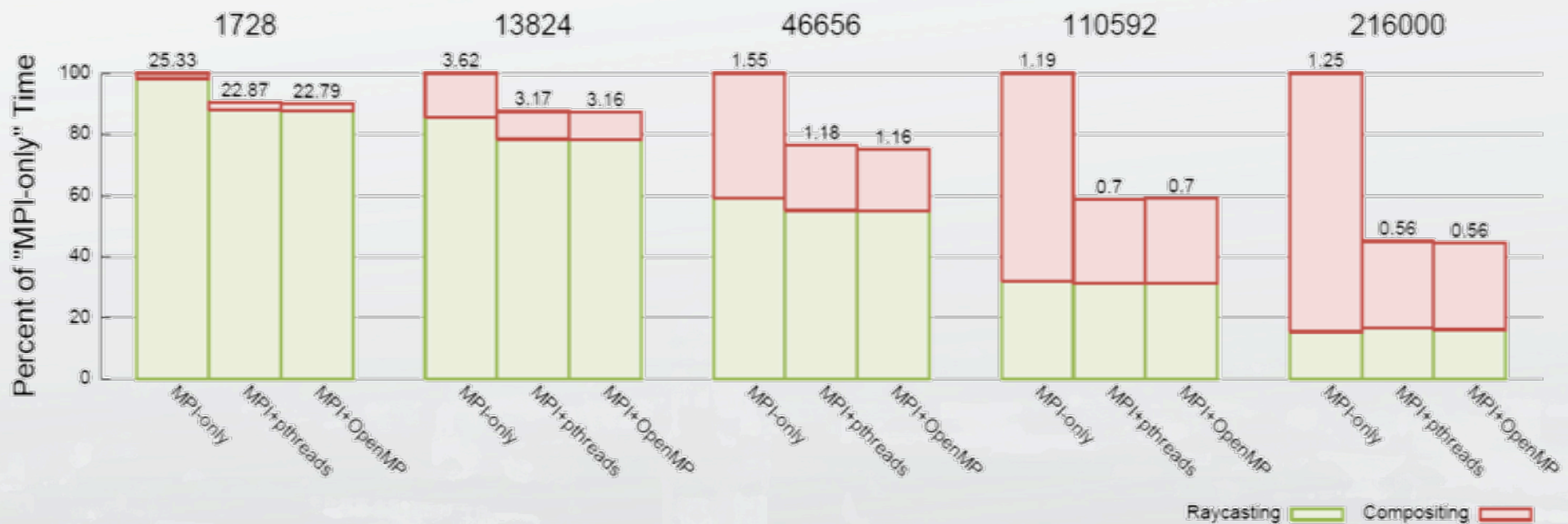


Parallel Volume Rendering



Volume Rendering Scalability

- Need lots of cores to render at acceptable speeds

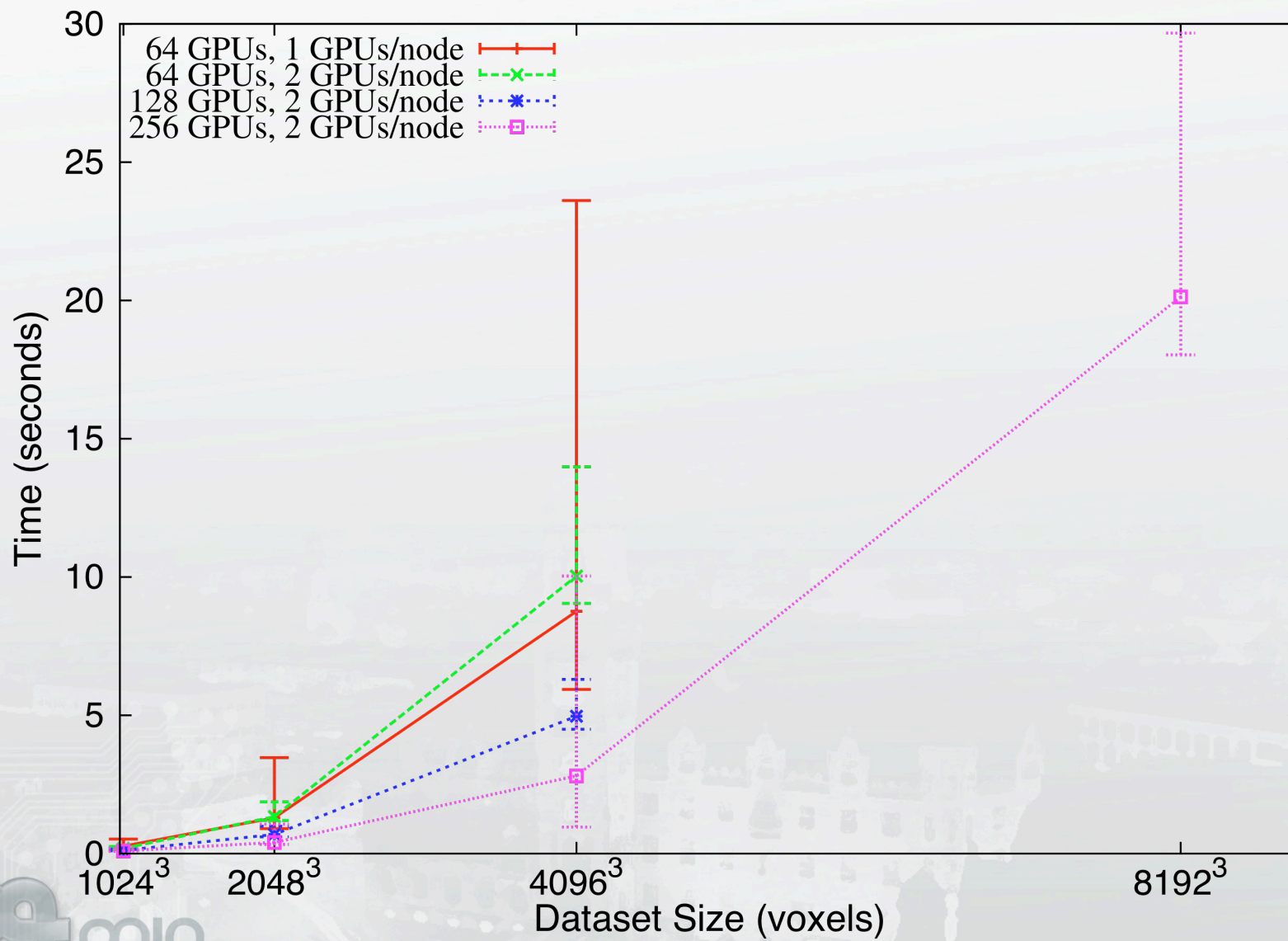


- Figure: Howison, Bethel, Childs, *MPI-hybrid Parallelism for Volume Rendering on Large, Multi-core Systems*, EGPGV 2010

Longhorn

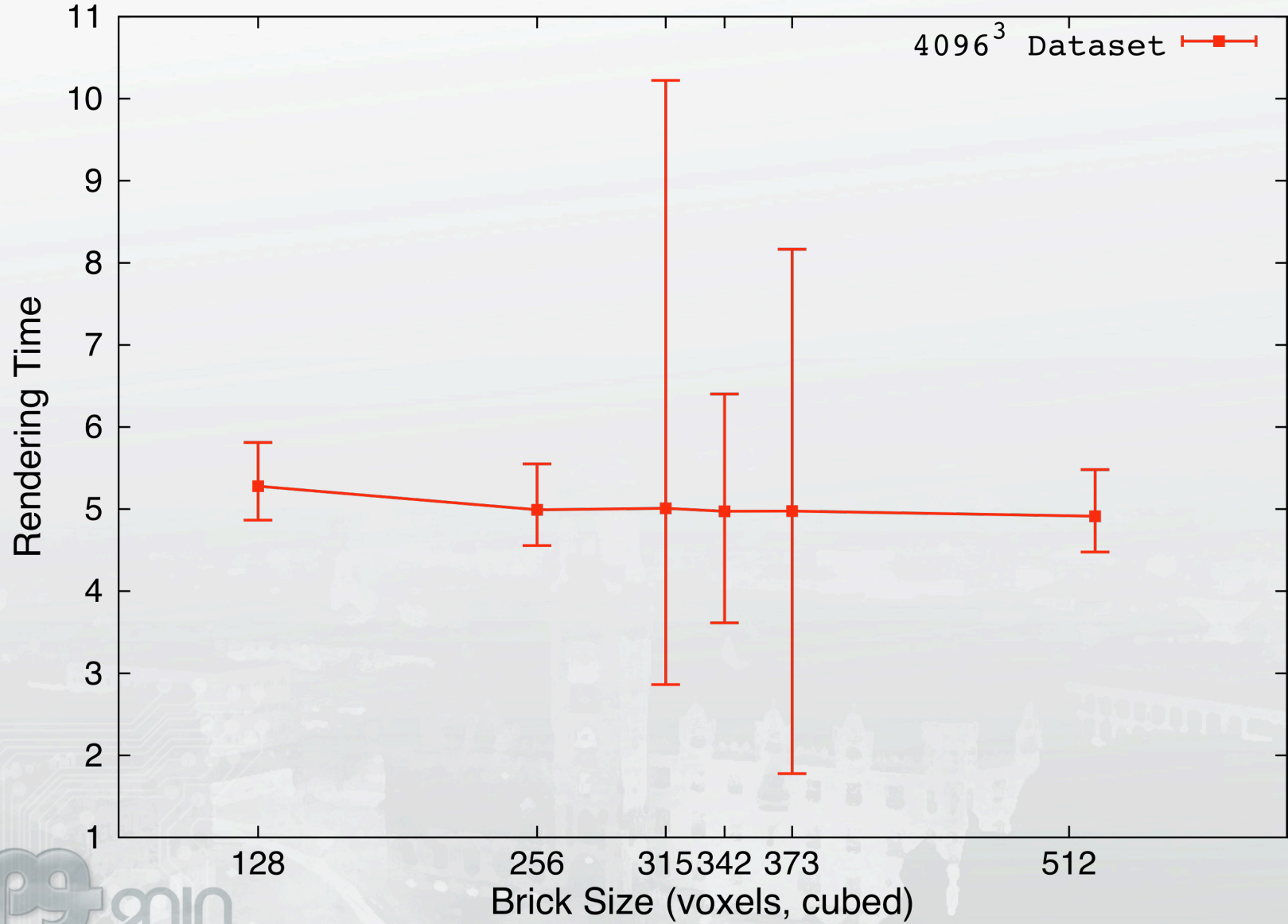


Performance

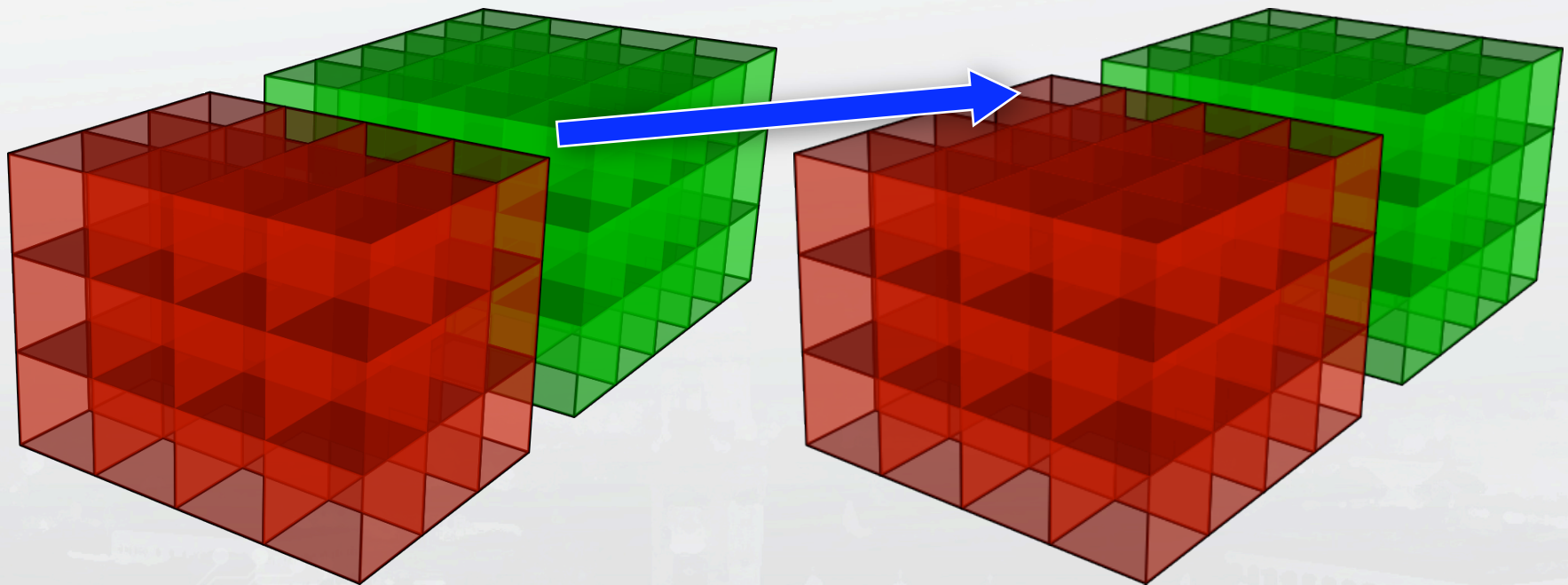
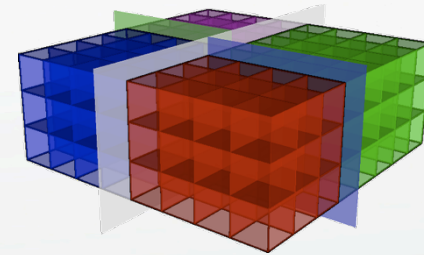


Brick Size

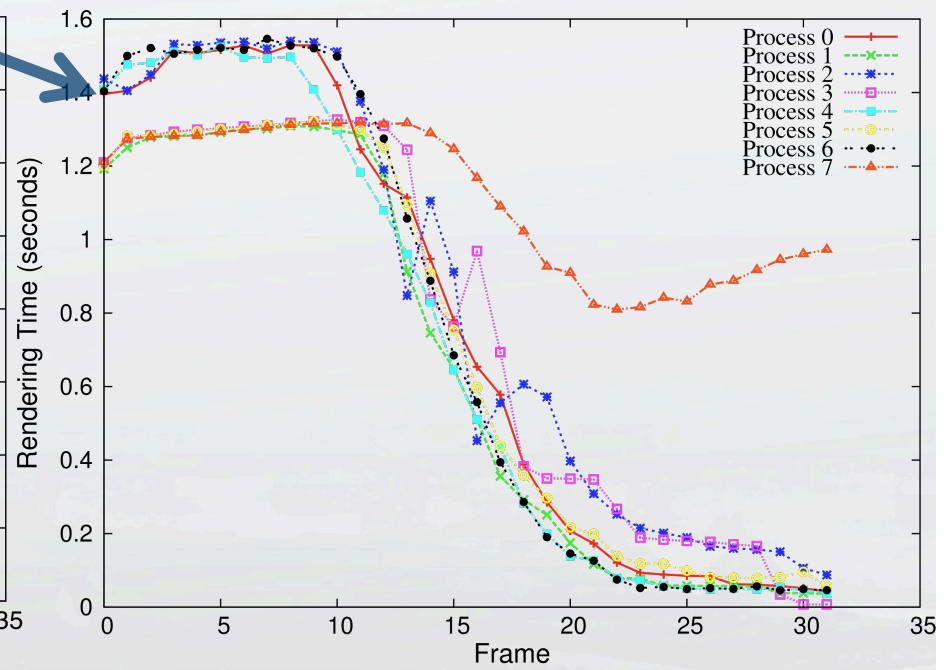
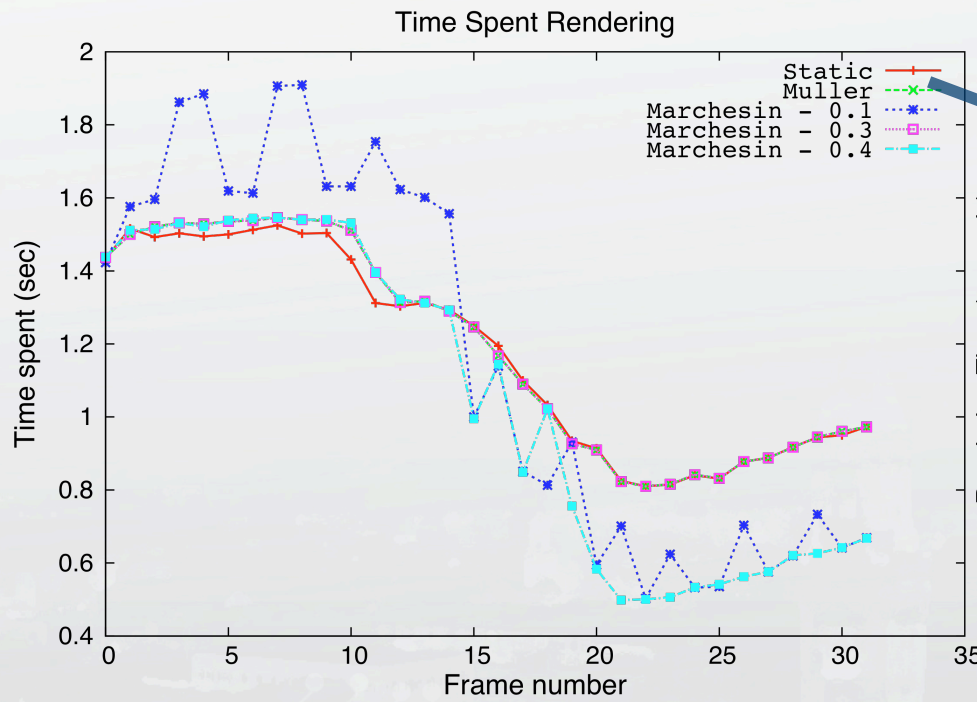
NVIDIA Quadro FX 5800's



Dynamic Load Balancing

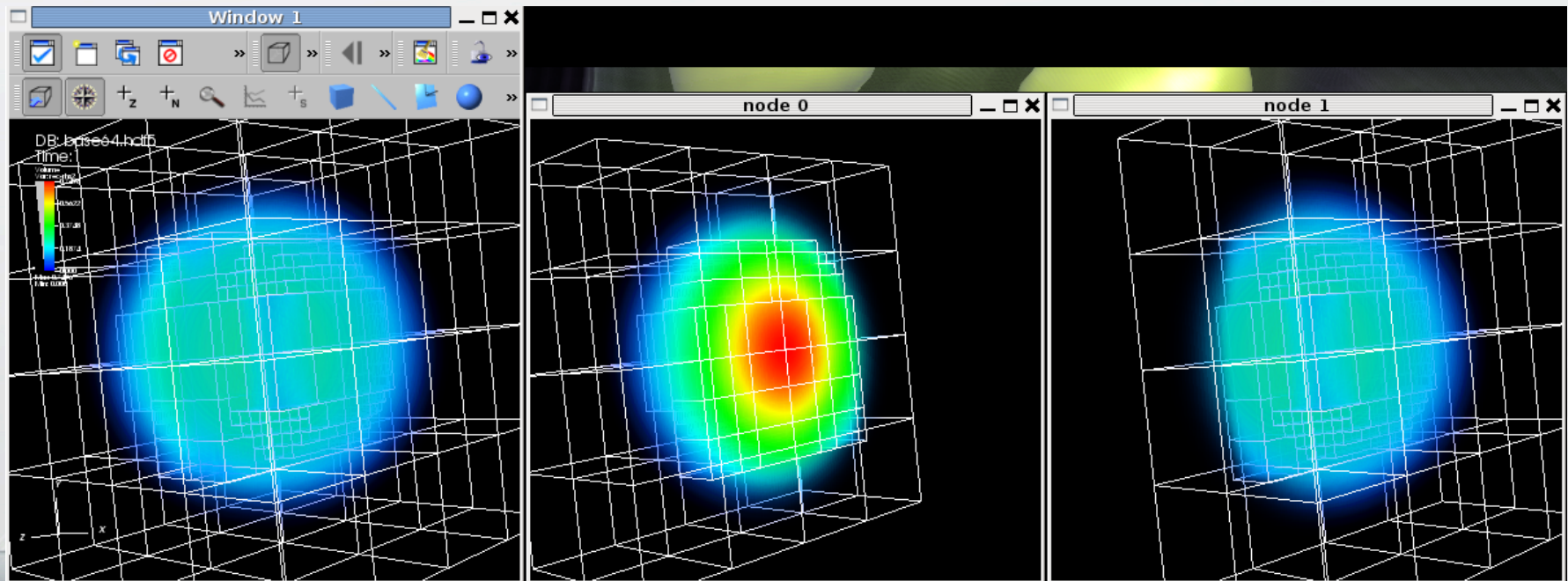


Load Balancing



Future Work - AMR

- "Adaptive mesh refinement" data
 - some spatial regions have higher-resolution
 - coarse/fine boundaries: sampling
 - uneven load distribution



Thanks

- Funding
 - VACET
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- Resources
 - TACC
 - ORNL
- Open source communities: GLEW, Mesa, VisIt
- Anonymous reviewers
- You!



Questions?

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