

SC 15 Five minute Presentation

- Traditional partitioning schemes focus on dividing the total work equally among the processors (ideal/perfect load balancing) which will introduce communication cost imbalances between nodes.
- These communication imbalances can decrease the overall performance in program execution.
- How octrees can be used to store hexahedral meshes.
- Nearest common ancestor of two octants.
- What is a Space filling curve and how it can be used in data partitioning.
- Comparison between graph partitioning and Space filling curve based partitioning.
- Contribution I: We are focus of developing partitioning scheme which introduces some flexibility in load balancing, and use allowed flexibility in load balancing to reduce the communication cost imbalance and overall communication cost.
- Comparison of flexible partitioning results of Hilbert and Morton Curve.
- Contribution II: We develop a new algorithm to calculate the Hilbert ordering based on the NCA approach which is almost efficient as Morton curve and 9 times faster than the traditional recursive approach of calculating Hilbert curve.