Distributed Volumetric Neural Representation for in situ Visualization and Analysis

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Summary:

Volumetric grids have recently been used by many recent works for representing complex scenes implicitly. A volumetric neural representation can be several orders of magnitude smaller in size while still preserving most of high-frequency details. However, most volumes used in large-scale in situ visualization and analysis are partitioned and generated directly in parallel. Therefore, a compatible technique to create volumetric neural representations for these situations is much needed. In this project, we explore the possibility of constructing and optimizing such a representation for large-scale distributed volumes. We present our preliminary results in this poster. We also outline our plans to integrate our techniques with existing in situ visualization and analysis pipelines.

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