Comparison of LOD Tree Data Structures on Rendering of Massive Point Models

Level of detail techniques are used to increase efficiency of rendering by decreasing load of application [1]. Purpose of LOD tree data structures is to organize data hierarchically. Some of examples are octree, kd-tree or multi-way kd-tree. Each data structures organize data differently, and each has its own advantages. Nodes of tree keep points of the model. For lower resolutions, points are grouped to represent model by less points [2].

In this project, different LOD Tree data structures will be implemented and compared. Firstly, for each data structure, points will be divided into tree nodes. Then, LOD construction stage is next. Points at the leaf nodes of the tree will be sampled to construct different resolution levels. Frame rate of tree data structures and their visual results will be compared. My aim for this project, write a software that can enable user to select different LOD Tree Data Structure to render models. User also can zoom in/out to model, rotate around model and change current model.

References
