Visualizations

Contributed by Administrator
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{gallery}vizualizations{/gallery}
First four pictures represent our test set of scenes which are used for benchmarking SEE-GRID and clusters. All of them are made in povray.
The first picture represents light harvesting complex which was get from PDB database with code 1RZG found at the Protein Data Bank web pages. Every atom from database file is represented as sphere (spacefill method), and uses unique color which makes it different from other atoms. H uses light blue color, C uses white color, O uses red color, N is blue. Yellow colour represents sulphur. Every atom has it's own radius. All mentioned atom atributes were get from Damir Zucic's molecular visualization software named Garlic. All PDB data was exported to relational database (developed at Unveirsity of Split, Faculty of Natural Sciences, at the Department of Physics) specially designed for easier and faster visualization and analysis of membrane proteins, or other molecules.
Data salected from databse is exported into povray, and rendered on grid or clusters, depending on it's complexity.
Second picture uses same database , and it represents NMR STRUCTURE OF [F5Y, F16W] MAGAININ 2 BOUND TO PHOSPHOLIPID VESICLES, whic is also found on Protein Data Bank web pages, and has 1DUM code. To get the colour of the molecule, we have choosen it's hidrophobicity from Kyte Doolitle hydrophobic scale, which was normalised to values between 0 and 1. Shape was drawn by connection the atoms (yellow spheres) with each other by triangles, to fill the space. That visualization was very complex to render, so we used it to make benchmarks on SEEgrid and clusters.
Third picture represents unfinished ferite cube memory block which was used for educational purposes.
Fourth picture represents a sphere made of cones used as control of virtue software. Every cone is a vector whose position is get from Virtue application which is used as pre processor before using povray or some other graphic software. After using Virtue, we used some script to convert it's code to povray, and rendered it on isabella cluster.
The fifth picture represents one of benchmarking scenes rendered on grid or cluster. It is 20x20x20 matrix which is made from silver cylinders, and camera is inserted inside the scene.
The sixth pocture represents magnetic field calcualted by virtue, and converted to povray then run on grid. Every value is represented as sphere, where it's color and size depends on intensity. In the middle of the picture, electromagnetic field has it's maximum values, so it becames red, and radius of sphere is maximal. As distance grows, electromagnetic field decreases, and spheres become smaller and darker blue.
Next two pictures represent electromotor which was programed by Mirsad Todorovac. Images were taken from tesla project.
The next tow pictures are made by same author, and belong to the same project. That pictures represent electromagnetic field in electromotor coils. By clicking on that images, full animation will be shown. Every movement shown on picture is slice in three dimensional field.