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Development of VDVGE: Volume visualization software for Google Earth

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Software to visualize volume data called VDVGE (Volume Data Visualizer for Google Earth) was developed. VDVGE visualizes a three-dimensional scalar data, and exports it to KML and COLLADA which are suitable format to Google Earth. Data format that can be input to VDVGE is a data descriptor file for GrADS (The Grid Analysis and Display System) that is visualization software for earth science data. In this software, volume rendering method using layered color slice images with opacity is used as one of the methods to express the visualization results of simulation data to represent on Google Earth. It is necessary to determine various parameters (transfer function, numbers of color slice images, and so on), and it requires much skill. However, it becomes easy to determine these parameters by operation using GUI. VDVGE is developed by using Qt SDK that is a GUI toolkit. Qt is a framework of the cross-platform, and the binary for Windows, Linux, and Mac OS can be made by a common source code. The source code of VDVGE has been published under GPL v3.0 license and anyone can use freely. In the presentation, we will introduce VDVGE and its technical features. And we will also introduce a cross-cutting approach (simulation, observation and visualization researchers) via this software.

Keywords: Google Earth, Volume visualization, Software development