Real-Time Modelling and Rendering: Heterogeneous Volumes with attributes

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Abstract- The fast growth of the Internet and the huge demand for running different applications, including modelling and rendering applications, on the net, started to attract the attention of both researchers and developers. Despite visualization, online users started to show a great interest in 3D model interaction. Applications started to request more computational power and consume more memory. The need for producing complex 3D volumes by accessing easy-to-use and plugin-free web-based applications started to grow fast. Recently, different real-time applications designed to do online interactive modelling and rendering showed up. Rendering the same 3D volume using different rendering approaches based on different constraints requires a complete study for scenario optimization. 3D modelling and rendering tools designed to create complex volumes are available online, some of which requires a deep knowledge in modeling, which could be a serious problem for the majority of the inline users. In this work, we try to introduce a real-time modelling and rendering environment on the net, based on client-server architecture. We discuss two coloring methods for heterogeneous volumes, implement different 3D volumes and compare results.

Keywords: 3Dmodelling,Rendering,SDF,WebGL,HyperFun,Function representation.

Biography

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