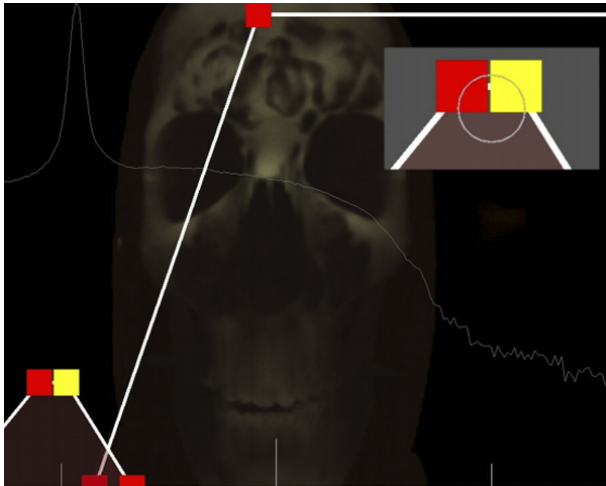


Practical Volume Rendering in Mobile Devices

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Volume rendering has been a relevant topic in scientific visualization for the last two decades. A decade ago the exploration of reasonably big volume datasets required costly workstations due to the high processing cost of this kind of visualization. In the last years, a high end PC or laptop was enough to be able to handle medium-sized datasets thanks specially to the fast evolution of GPU hardware. New embedded CPUs that sport powerful graphics chipsets make complex 3D applications feasible in such devices. However, besides the much marketed presentations and all its hype, no real empirical data is usually

available that makes comparing absolute and relative capabilities possible. In this paper we analyze current graphics hardware in most high-end Android mobile devices and perform a practical comparison of a well-known GPU-intensive task: volume rendering. We analyze different aspects by implementing three different classical algorithms and show how the current state-of-the-art mobile GPUs behave in volume rendering.