Towards Real-Time Tone Mapping

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Abstract

The conversion from any measured or calculated luminance to display values is a process that can be calculated with arbitrary complexity. On one end of the spectrum lie very simple algorithms, such as gamma-correction, on the other hand there are very sophisticated attributes of the human visual system that must be simulated on too low range displays, such as time dependency, visual acuity, and color sensitivity. For interactive computer graphics applications, like simulators or virtual reality setups, a very limited time interval remains for the tone mapping step, which makes very efficient algorithms and approximations necessary. This talk will illustrate the involved problems and give some directions for the solution of the real-time tone mapping challenge. Some results can be found soon at www.cg.tuwien.ac.at.