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Quantifying Temporal Light Quality

Dr. Dragan Sekulovski Senior Scientist, Philips Research Europe, Eindhoven

The fast rate at which solid state lighting sources can change their intensity is one of the main drivers behind the revolution in the lighting world and applications of lighting. The fast rate also means that all the modulation of the driving current, both intended and unintended, will be directly translated to modulation of the output light. In turn, the light modulation can give rise to changes in the perception of the environment.

While in some very specific entertainment applications a change of perception due to light modulation is desired, for most every day applications and activities the change is undesired. These changes in the perception of the environment are called temporal light artifacts (TLAs) and can have a large influence on the judgment of the light quality. Moreover, the visible modulation of light can lead to a decrease in performance, increased fatigue as well as acute health problems like epileptic seizures and migraine episodes.

This talk gives an overview of the state of the art in the methods for measuring the temporal quality of light. First, different aspect of temporal quality of light are discussed and defined. In the second part, the parameters that influence the visibility of TLAs are reviewed. The last part gives an overview of the recommended methods for the quantification of the different temporal light artifacts.

Prof. Dr. Michael Bredol

Prof. Dr. Thomas Jüstel

Prof. Dr. Ulrich Kynast

Prof. Dr. Konrad Mertens

Prof. Dr. Ulrich Wittrock

Ort:

Raum D 145 (Gebäudeteil D, Parkplatz P3) Stegerwaldstraße 39 48565 Steinfurt

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Finladender: Prof. Dr. Konrad Mertens