



Access provided by:  
Universitätsbibliothek der TU  
Wien  
Sign Out



BROWSE

MY SETTINGS

GET HELP

WHAT CAN I ACCESS?

Browse Journals & Magazines > Visualization and Computer Gr...> Volume:22 Issue:1

Back to Results

# LiteVis: Integrated Visualization for Simulation-Based Decision Support in Lighting Design

Full Text as PDF

Full Text in HTML

6  
Author(s)

Sorger, J. ; Ortner, T. ; Luksch, C. ; Schwärzler, M.  
more authors

Abstract	Authors	References	Cited By	Keywords	Metrics	Similar	Multimedia
----------	---------	------------	----------	----------	---------	---------	------------

State-of-the-art **lighting design** is based on physically accurate **lighting** simulations of scenes such as offices. The **simulation** results support **lighting** designers in the creation of **lighting** configurations, which must meet contradicting customer objectives regarding quality and price while conforming to industry standards. However, current tools for **lighting design** impede rapid feedback cycles. On the one side, they decouple analysis and **simulation** specification. On the other side, they lack capabilities for a detailed comparison of multiple configurations. The primary contribution of this paper is a **design** study of **LiteVis**, a system for efficient **decision support** in **lighting design**. **LiteVis** tightly **integrates** global illumination-based **lighting simulation**, a spatial representation of the scene, and non-spatial **visualizations** of parameters and result indicators. This enables an efficient iterative cycle of **simulation** parametrization and analysis. Specifically, a novel **visualization supports decision** making by ranking simulated **lighting** configurations with regard to a **weight-based** prioritization of objectives that considers both spatial and non-spatial characteristics. In the spatial domain, novel concepts support a detailed comparison of illumination scenarios. We demonstrate **LiteVis** using a real-world use case and report qualitative feedback of **lighting** designers. This feedback indicates that **LiteVis** successfully **supports lighting** designers to achieve key tasks more efficiently and with greater certainty.

**Published in:**

Visualization and Computer Graphics, IEEE Transactions on (Volume:22 , Issue: 1 )

**Page(s):**  
290 - 299

**Date of Publication :**  
12 August 2015

**ISSN :**  
1077-2626

**Date of Current Version :**  
28 October 2015

**INSPEC Accession Number:**  
15568012

**Issue Date :**  
Jan. 31 2016

**DOI:**  
10.1109/TVCG.2015.2468011

**Sponsored by :**  
IEEE Computer Society

**Publisher:**  
IEEE

Personal Sign In | Create Account

**IEEE Account**

- » Change Username/Password
- » Update Address

**Purchase Details**

- » Payment Options
- » Order History
- » View Purchased Documents

**Profile Information**

- » Communications Preferences
- » Profession and Education
- » Technical Interests

**Need Help?**

- » US & Canada: +1 800 678 4333
- » Worldwide: +1 732 981 0060
- » Contact & Support