MOTION BLUR AND LCDs

Wednesday, May 23 / 3:30 – 4:50 pm / Room 102

Chair:
Stephen P. Atwood, *Capstone Visual Product Development, Webster, MA, U.S.A.*

Co-Chair:
Michael Klein, *Photo Research, Inc., Chatsworth, CA, U.S.A.*

26.1: Motion-Blur Measurement and Evaluation: From Theory to the Laboratory (3:30)

M. Becker
Display-Metrology & Systems, Karlsruhe, Germany

Analysis of measurement data acquired with three different methods will be presented. The relationship between the impulse response and the spreading of moving lines and the degradation of their contrast will be shown. An idealized display device with transparent and controllable timing is introduced as a reference for all motion-artifact measurement methods.

26.2: Comparison of Motion-Blur Measurement in LCDs (3:50)

X-F. Feng, H. Pan, S. Daly
Sharp Labortories of America, Camas, WA, U.S.A.

Previously, LCD motion blur was modeled as a temporal point-spread function (PSF) of an LCD. The measured motion blur using both the spatial tracking camera approach and the temporal response approach at various backlight flashing methods will be explored. The temporal PSF method can potentially replace expensive MPRT tracking camera instruments.

26.3: Characterizing LCD Motion Color Artifacts Using Simulation Methods (4:10)

X-H. Li
Southeast University, Nanjing, China

K. Teunissen
Philips Consumer Electronics, Eindhoven, The Netherlands

I. Heynderickx
Philips Research Laboratories, Eindhoven, The Netherlands

A simulation method to characterize motion color artifacts from temporal step responses of the primary colors and HVS is proposed. The perceived image is derived from the motion-picture-response curves calculated from measured response curves with a 1-frame shift function. The model predictions are validated by a perception experiment.

26.4: Relationship between LCD Response Time and MPRT (4:30)

P. Boher, D. Glinel, T. Leroux, T. Bignon, J. Curt
ELDIM, Herouville, Saint Clair, France

A new analysis method to relate the conventional temporal behavior of LCDs (response time) to the Motion Picture Response Time (MPRT) is proposed. By using this method, the MPRT can be determined directly from measured response times in any driving configuration, greatly simplifying the measurement process.

BREAK (4:50-5:10)

AUTHOR INTERVIEWS (6:30–7:30)