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Digital Optics for Immersive Displays

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21 May 2018 Viewing optics for immersive near-eye displays: pupil swim/size and weight/stray light. Ying Geng, Jacques Gollier, Brian Wheelwright, Fenglin Peng, Yusufu Sulai, Brant Lewis, Ning Chan, Wai Sze Tiffany Lam, Alexander Fix, Douglas Lanman, Yijing Fu, Alexander Sohn, Brett Bryars, Nelson Cardenas, Youngshik Yoon, Scott McEldowney.Â Subscribe to digital library.Â Near-eye display performance is usually summarized with a few simple metrics such as field of view, resolution, brightness, size, and weight, which are derived from the display industry. In practice, near-eye displays often suffer from image artifacts not captured in traditional display metrics. Optical architectures. Optics in smart glasses serve three main purposes: Collimation of light such that the image appears at a greater distance than itâ€™s physical distance. Magnification of the display image to make it appear larger than itâ€™s actual size. Relaying of light patterns to the viewers eyes. Distortion. There are two primary optical design systems, or architectures for AR and VR displays: pupil forming and non-pupil forming.Â Fully immersive These are standard fully immersive virtual reality displays. These stereoscopic displays are combined with sensors to track position and orientation. They completely block the userâ€™s view of the outside world like in the book â€˜Ready Player Oneâ€™. PROCEEDINGS VOLUME 11350. Digital Optics for Immersive Displays II. Editor(s): Bernard C. Kress; Christophe Peroz. For the purchase of this volume in printed format, please visit Proceedings.com.Â The mechanical feasibility of curved micro-displays will also be discussed, as well as the process to make a curved microdisplay, which is compatible with current mass-production CMOS displays. For OLED technology, the main resistance to curvature is the silicon substrate. The case for GaN technologies shows other mechanical limitations. 21 May 2018 Viewing optics for immersive near-eye displays: pupil swim/size and weight/stray light. Ying Geng, Jacques Gollier, Brian Wheelwright, Fenglin Peng, Yusufu Sulai, Brant Lewis, Ning Chan, Wai Sze Tiffany Lam, Alexander Fix, Douglas Lanman, Yijing Fu, Alexander Sohn, Brett Bryars, Nelson Cardenas, Youngshik Yoon, Scott McEldowney.Â Near-eye display performance is usually summarized with a few simple metrics such as field of view, resolution, brightness, size, and weight, which are derived from the display industry. In practice, near-eye displays often suffer from image artifacts not captured in traditional display metrics.Â Subscribe to digital library.