Dynamic field-of-view restrictors to reduce Virtual Reality motion sickness

*Technology #cu16212*

Virtual Reality (VR) products provide unparalleled visual 3D experiences. However, VR eyewear can cause symptoms similar to motion sickness when there is a mismatch in the virtual visual motion and physical orientation of the user. This technology adjusts the field-of-view of the VR eyepiece according to the perceived motion in VR. By narrowing the field-of-view, the mismatch between virtual and physical motion decreases and motion sickness is reduced. With this technology, VR enthusiasts can enjoy a great quality experience without virtual reality motion sickness.

**Dynamic yet imperceptible restrictors respond to VR motion to reduce sensory imbalance**

Motion in Virtual Reality scenes often creates a sensory mismatch between the user’s own internal sense of balance, physical orientation and perceived visual motion. This mismatch between the visual and vestibular system can cause symptoms similar to motion sickness such as headaches and nausea. Larger fields of view lead to noticeable sensory mismatches when a stationary user experiences virtual motion. This technology, via an aperture at the VR eyepiece, provides a dynamic means to adjust the field-of-view of the virtual reality eyepiece. By restricting the field-of-view in response to virtual motion reduces sensory mismatch and associated VR sickness. This is done in a way such that it does not produce a perceptible change in the virtual environment to the user.

A prototype of the technology has been among VR users and been shown to reduce VR sickness symptoms without causing a perceptible hindrance to the VR experience.

**Lead Inventor:**

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**Applications:**

- Reducing VR motion sickness
- Sensors for environmental field studies from water supply to air pollution
- Biosensors for clinical diagnostics and drug delivery
- Cell-on-chip systems
- Biodefense sensors for counter-terrorism and public health
- Sensors for reconnaissance

**Advantages:**
- Dynamically adjusts to virtual environment
- Imperceptible to user
- Can be integrated with eye-tracking to follow line-of-sight

**Patent Information:**
Patent Pending
Tech Ventures Reference: IR CU16212

**Related Publications:**

**Inventors**

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