

Motion perception is a critical function of the visual system and perhaps the best understood area of vision science. Surprisingly little is known however about motion perception in three dimensions.

I will discuss recent research into human sensitivity to 3D motion signals. While an array of visual cues supports the perception of motion in three dimensions, individual observers differ significantly in their reliance on individual cues. In addition to fundamental insights into the extraction and integration of 3D motion signals, this research sheds light on the relationship between visual sensitivity and the susceptibility to motion sickness.

This work builds towards an understanding of the abilities and limitations of a visual system that operates in a three-dimensional world. In addition to addressing basic science questions, I will discuss implications for virtual and augmented reality.

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