



AB074. Link between interocular correlation sensitivity and stereoscopic vision

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Background: Stereoscopic Vision uses the disparity between the two images received by the two eyes in order to create a tridimensional representation. With this study, we aimed at providing an estimate of binocular vision at a level prior to disparity processing. In particular, we wanted to assess the spatial properties of the visual system for detecting interocular correlations (IOC).

Methods: We developed dichoptic stimuli, made of textures which IOC is sinusoidally modulated at various correlation spatial frequencies. Then, we compared the sensitivity to these stimuli to the sensitivity to analogous stimuli with disparity modulation.

Results: We observed that IOC sensitivity presents a low-pass/band-pass profile and increases as a function of presentation duration and contrast, in a similar way as disparity sensitivity.

Conclusions: IOC sensitivity is weakly—though significantly—correlated with disparity sensitivity in the general population, which suggests that it could provide a marker for binocular vision, prior to disparity processing.

Keywords: Binocular vision; interocular correlation (IOC); stereoscopy; psychophysics

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