

The University of Hong Kong
Department of Psychology

Departmental Seminar

The Perception of Object Motion during Self-motion

Date: December 16, 2013 (Monday)
Time: 11:30 a.m. – 12:30 p.m.
Venue: Room 813, 8/F, The Jockey Club Tower, Centennial Campus, HKU
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When we stand still and do not move our eyes and head, the motion of an object in the world or the absence thereof is directly given by the motion or quiescence of the retinal image. Self-motion through the world however complicates this retinal image. During self-motion, the whole retinal image undergoes coherent global motion, called optic flow. This optic flow causes the retinal motion of objects moving in the world to be confounded by a motion component due to self-motion. How then do we perceive the motion of an object in the world when we ourselves are also moving? Recently, a visual strategy for solving this perceptual problem has been proposed: the flow parsing hypothesis. In this hypothesis, the brain uses its well-documented sensitivity to optic flow to detect and globally remove retinal motion due to self-motion and recover the scene-relative motion of objects. In my thesis work, I have designed a method to measure the gain with which the flow parsing mechanism uses the optic flow to remove the self-motion component from an object's retinal motion. I used this method to investigate how accurate scene-relative object motion perception during self-motion can be based on only visual information, whether flow parsing depends on a percept of the direction of self-motion and the tuning of flow parsing, i.e., how it is modulated by changes in various stimulus aspects