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Vortragseinladung

Montag, den 29.01.2018, 14 ct**Thema: Divisive inhibition as a solution to the correspondence problem in perceptual organization****Ort: Universität Regensburg, VG 0.04 (Vielberth-Gebäude)****Referent: Prof. Chien-Chung Chen, Department of Psychology, National Taiwan University, Taipei, Taiwan, ROC**

To perceive an object in a scene, the visual system needs to integrate local image elements together for a coherent percept. However, in any sufficiently complex scene, there are multiple possible ways to organize local elements. Hence, it is a challenge for the visual system to find the right correspondence among local elements. For instance, to perceive symmetry, the visual system needs to find correspondence between image elements across a symmetry axis. However, if the location and orientation of the symmetry axis are unknown, the midpoint between any pairs of image elements is a candidate for a symmetry axis. We measured symmetry detection under various contexts and different amount of axis-orientation uncertainty. Our result was best described by a multiple channel model in which each channel tunes to a specific axis orientation. The response of each channel is the number of corresponding elements consistent with the tuned symmetry axis divided by an inhibition signal from other channels. Similar result and computation principle also found in contour integration, Glass pattern perception and Ebbinghaus size illusion. Thus, divisive inhibition, which was originally proposed to explain phenomena in the contrast domain, is ubiquitous in perceptual grouping. It serves to suppress unwanted groupings and to ensure the emergence of the right ones.