



Life Sciences Seminar

Saccadic suppression by way of retinal-circuit image processing

Saad Idrees (Retinal Circuits and Optogenetics, AG Münch, Centre for Integrative Neuroscience, Tübingen, Germany)

Host: Sandra Siegert

Visual sensitivity is strongly impaired around the time of rapid eye movements such as saccades. This robust perceptual phenomenon, called saccadic suppression, is frequently attributed to suppressive signals that are directly derived from eye movement commands. Using a combination of human behavior and animal retina electrophysiology, we show instead that visual-only mechanisms, triggered by scene changes across the retina, can account for all perceptual properties of saccadic suppression we investigated, without the need to invoke explicit eye movement based suppression commands. Such mechanisms start at the very first stage of visual processing in the brain, the retina. In the retina, we found that retinal saccadic suppression occurred robustly across many different ganglion cell types and is a result of specific retinal-circuit image processing mediated by multiple local and global mechanisms. Additionally, we show that suppression originating in the retina outlasts perceptual suppression during saccades, suggesting that eye-movement related signals might act to instead shorten the suppression originating in the retina. We have therefore identified one of the first neural loci of saccadic suppression and described the underlying mechanisms.

Thursday, August 29, 2019 11:00am - 12:00pm

IST Austria Campus Mondi Seminar Room 3, Central Building



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