

Dynamics of Perceptual Bistability

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When experiencing an ambiguous sensory stimulus (e.g., the vase-faces image) subjects may report haphazard alternations (time scale, seconds) between the possible interpretations. Various dynamical models that implement neuronal competition with reciprocal inhibition between neuronal populations show alternations behaving as noisy oscillators or as bistable systems subject to noise-driven switching. Slow negative feedback, neuronal firing adaptation or synaptic depression, sets the basic time scale (seconds) for switching. A minimal statistical model based on alternating renewal processes (with durations described by gamma distributions) captures various aspects of the percept time series.

The lecture will take place in Thackeray 704 at 4:00pm.
Refreshments will start at 3:30pm.