

Title: “Amplitude equations describing human perception and performance under adaptation”

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In recent years, a community of researchers has discussed the working hypothesis that human perception and performance can be understood from the perspective of dynamical systems theory. In particular, it has been suggested to describe human perceptual experiences and human behaviors by means of suitably defined patterns (e.g. patterns of neural brain activity) that are assumed to emerge at via self-organization. The build-up and vanishing of these patterns at bifurcation points is then determined by amplitude equations. The talk focuses on the special case when human perception and performance is subjected to adaptation. To account for adaptation a two-layered dynamical system approach is suggested featuring a slowly evolving parameter dynamics in addition to the aforementioned amplitude equations. The theoretical framework that has been referred to as quasi-attractor theory (Haken) or extended synergetics (Frank) will be presented. Examples from human perception, decision making, and human behavior will be given.