



Department of Psychology  
The University of Hong Kong

香港大學心理學系

## Departmental Seminar

# On the Interplay of Dorsal and Ventral Brain Networks during Emotion Processing – Insights from Behavioral Measures, Electro-and Magnetoencephalography (EEG/MEG), and Neurostimulation Approaches

11:30 a.m. – 12:30 p.m. | May 2, 2018 (Wednesday)

CPD-2.42, Central Podium Level | Centennial Campus | The University of Hong Kong



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### Abstract

Adaptive responses to motivationally salient environmental stimuli (e.g. threat, food...) promote survival. Therefore, our neuronal system needs to quickly detect and preferentially process emotional stimuli. This is reflected in fast brain responses to emotionally high-arousing pleasant (e.g. food) and unpleasant (e.g. threat) compared to neutral stimuli. On the other hand, such stimulus-driven bottom-up processes need to be regulated and adjusted in a top-down manner. Traditionally, ventral (especially temporo-occipital) and dorsal (especially prefrontal) brain-regions have been linked to automatic bottom-up and later top-down processes, respectively. To shed light on the spatiotemporal dynamics of these processes, we are going to present behavioral and brain data from EEG, MEG and neurostimulation studies. Based on experiments on emotion perception and threat-conditioning, we argue that prefrontal structures are recruited already during earliest stages of (bottom-up) processing. The modulation of prefrontal brain excitability by means of neurostimulation (rTMS, tDCS) influences neuronal activity in ventral regions and behavioral responses to emotional stimuli in a valence-and arousal-specific manner. Implications of our findings for dysregulated emotion processing in clinical populations will be discussed.

~All are Welcome~