TECHNISCHE UNIVERSITÄT
CHEMNITZ

Institut für Physik
Physikalisches Kolloquium

Mittwoch, 18.05.2016, um **16:00 Uhr**

Ort: Reichenhainer Str. 90;
Zentrales Hörsaal- und Seminargebäude,
Raum 2/N013

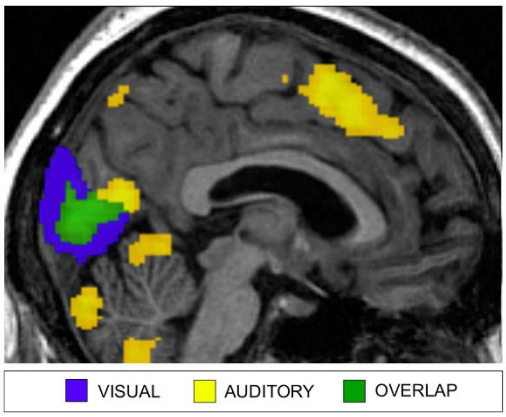
Dr. Giulia Dormal

Universität Hamburg
Biological Psychology and Neuropsychology

Investigating brain reorganizations associated with visual deprivation and restoration using functional magnetic resonance imaging

Neuroplasticity refers to the capacity of the brain to change in structure and function in order to adapt to its environment. A striking example of such plasticity is found in blind humans, in whom the deprived occipital cortex – typically devoted to vision – compensates for the loss of vision by responding to the preserved non-visual modalities. In the first part of my talk, I will review recent work in blind humans showing that the occipital cortex, while being responsive to non-visual stimuli, still maintains a functional specialization similar to the one observed in the sighted. I will then present novel findings demonstrating a massive reorganization in both the responsiveness and large-scale connectivity of occipital regions supporting the processing of auditory motion in early blind humans. These reorganizations in the occipital cortex of blind humans raise crucial challenges for individuals encountering sight restoration. Recently, we had the unique opportunity to track the neurophysiological changes taking place in the occipital cortex of an early and severely visually impaired patient before and after her sight was restored in adulthood. We demonstrate that functional and structural changes evidenced in the visually-deprived occipital cortex can partially reverse following sight restoration in adulthood. Altogether, this research demonstrates the striking adaptability of the occipital cortex facing drastic changes in visual experience.

Brain responses to auditory and visual stimuli 7 months after surgery



Alle Zuhörer sind ab 15:45 zu Kaffee und Tee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt:
Prof. Dr. Michael Schreiber, Tel. 0371 531-21910

www.tu-chemnitz.de/physik