

Brain-Computer Interface (BCI) Workshop

A sponsored satellite event at the iCBEB 2014, www.icbeb.org

Friday, Sept 26, 19:00, Beijing Kuntai Hotel

Participation is free of charge

A Brain-Computer Interface (BCI) provides a new communication channel between the human brain and a computer. Mental activity involves electrical activity, and these electrophysiological signals can be recorded with techniques like the Electroencephalogram (EEG) or Electrocorticogram (ECoG). The BCI system detects and classifies such changes and transforms them into control signals, which can be used for moving objects, writing letters, opening doors, changing TV channels and other everyday household activities. This technology helps people with limited mobility increase their independence. One of the main goals is to enable completely paralyzed patients (locked-in syndrome) to communicate with their environment. Recent approaches also show a high potential for the use of BCI technology in motor rehabilitation (e.g. for stroke patients), for coma assessment and for communication with minimally conscious patients.



Theoretical Part (60-90 min):

- Introduction to the topic of Brain-Computer Interface
- Different methodological approaches and neuropsychological/physiological background
- Techniques for recording brain activity for BCI research and applications
- Possible applications for communication, patient assessment, rehabilitation and entertainment
- Limitations, assets and drawbacks of different applications
- State-of-the-art in BCI research/applications and future developments

Practical Part (60 - 120 min):

- Introduction to user-ready applications and to research environment for P300-speller, Motor-Imagery-BCI, and SSVEP robot control
- Volunteers can participate in several BCI-life experiments
- Final discussion, Q/A



Lecturer:

Gunther Krausz is a neuropsychologist and an engineer in electronics and telecommunication. He worked for several years in the field of BCI research and EEG basic research and was a lecturer in experimental psychology before he joined g.tec in 2003. He is actively involved in several international research projects, of which most are related to BCI. g.tec supplies universities and research labs worldwide with hard- and software for biosignal acquisition, processing and analysis, especially for real-time applications like BCIs.