Exploring Neuroadaptive Technologies through Passive BCI

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Abstract / Short description

Prof. Dr. Thorsten O. Zander from Brandenburg University of Technology (BTU), who co-leads this workshop with Dr. Marius Klug (BTU) and Brain Products GmbH, dives into the potentials of Passive Brain-Computer Interfaces (pBCIs) for Neuroadaptive Technologies. Beginning with an introduction to pBCI, he highlights its role in enhancing Human-Computer Interaction by intuitively integrating user states into systems without explicit commands. Dr. Klug then explores applications within Virtual Reality environments, showcasing the practical implications for immersive user experiences. Completing the workshop, Brain Products GmbH will provide a hands-on demonstration of different EEG amplifiers and electrodes to be tried out live, with a focus on mobility and real-world applications. This segment emphasizes the tangible aspects of deploying EEG technology in Neuroergonomics. Aimed at attendees that do not need a specific background knowledge in EEG or pBCI this workshop is structured to bridge theory with application, encouraging innovation in the intersection of neuroscience and ergonomic design.

Keywords

EEG, BCI, passive BCI, Neuroadaptive Technologies

Prerequisites

General knowledge about EEG and signal processing is helpful, but not required, as this includes a beginners hands-on introduction to EEG

Tentative Schedule for a 4-hour session - Tuesday, July 9th:

Workshop/Tutorial	
8 am	Welcome and introduction
8:30 am	Talk (Prof. Dr. Thorsten O. Zander): Passive BCIs and Neuroadaptive Technology
9:30 am	Talk (Dr. Marius Klug): Intuitive XR – How Neuroadaptive Technology can shape virtual worlds
10:30 am	Q/A and Discussion
11:00 pm	Hands-on EEG Session