

# Workshop on Passive BCI, Lab Streaming Layer, and Neuroadaptive Technology

*Dr. Thorsten O. Zander, Laurens R. Krol, Lena M. Andreessen @ Team PhyPA, TU Berlin, Berlin, Germany*

*Dr. Patrick Britz, Dr. David Medine, Ratko Petrovic, Dr. Luke R. Enge @ Brain Products, Gilching, Germany*

## **Abstract:**

This workshop is aimed at participants interested in applications of BCI technology in Human-Computer Interaction for users without disabilities. It is intended to represent the Society for Neuroadaptive Technology (SNAT, [1]) and to support the communication between this society and BCI researchers.

Dr. Thorsten O. Zander will present and discuss the aims of passive BCI research, Neuroadaptive Technology and modern Human-Computer Interaction [2]. This part represents a forum to identify synergies and develop new ideas.

Dr. David Medine and Ratko Petrovic, will present technological developments for passive and hybrid BCIs. Dr. Medine will present the LabStreamingLayer (LSL, [3]), an open-source software project for synchronized, multi-modal data streaming and recording. Mr. Petrovic will present recent hardware developments compatible with LSL.

The third part is a hands-on demonstration with Neuroadaptive Technologies. In several groups, participants use an application combining passive BCI, gaze control and dry electrodes.

**Number of expected participants: 60**

## **Time table:**

10.00 Talk by Thorsten O. Zander

11.00 Group Discussion

12.00 Talk by David Medine and Ratko Petrovic

13.00 Hands-on experiences (incl. Eye-tracker, dry electrodes and real time application of BCI technology)

## **References:**

[1] [www.neuroadaptive.org](http://www.neuroadaptive.org)

[2] Zander, T. O., Krol, L. R., Birbaumer, N. P., & Gramann, K. (2016). Neuroadaptive technology enables implicit cursor control based on medial prefrontal cortex activity. *Proceedings of the National Academy of Sciences (PNAS)*, 201605155.

[3] Kothe, C. (2014). Lab streaming layer (lsl). <https://github.com/sccn/labstreaminglayer>. Accessed on October, 26, 2015.