







	CV acc.	Participant reported having control?
Participant No. 1	98	yes
Participant No. 2	58	no
Participant No. 3	51	no
Participant No. 4	64	no
Participant No. 5	89	yes
Participant No. 6	95	yes

Table 1: Best classification accuracy from pairwise comparisons of the classes via cross validation.

## 6 Discussion and Outlook

The results of this precursor study indicate that a one-dimensional control via active BCIs is applicable in real world applications. Interestingly the group of participants was divided in two subgroups. One group had almost perfect control while the other had no control at all. In future studies we will investigate whether this is a stable effect and whether the participants show a similar result in standardized lab-studies. As the aircraft's flight dynamics have an impact on control as well, we will also investigate further improvements of the flight controller.

## References

- [1] Benjamin Blankertz, Ryota Tomioka, Steven Lemm, Motoaki Kawanabe, and K-R Muller. Optimizing spatial filters for robust eeg single-trial analysis. *Signal Processing Magazine, IEEE*, 25(1):41–56, 2008.
- [2] Christian A. Kothe and Scott Makeig. Beilab: a platform for brain–computer interface development. *Journal of neural engineering*, 10(5):056014, 2013.
- [3] Herman Albert Mooij. Criteria for low-speed longitudinal handling qualities of transport aircraft with closed-loop flight control systems. 1984.
- [4] Herbert Ramoser, Johannes Muller-Gerking, and Gert Pfurtscheller. Optimal spatial filtering of single trial eeg during imagined hand movement. *Rehabilitation Engineering, IEEE Transactions on*, 8(4):441–446, 2000.
- [5] Thorsten O. Zander. *Utilizing Brain-Computer Interfaces for Human-Machine Systems*. PhD thesis, Universitätsbibliothek der Technischen Universität Berlin, 2011.
- [6] Thorsten O Zander and Christian Kothe. Towards passive brain–computer interfaces: applying brain–computer interface technology to human–machine systems in general. *Journal of Neural Engineering*, 8(2):025005, 2011.