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Thema: **Effects of transcranial random noise stimulation (tRNS) on motion perception**

Ort: **Universität Regensburg, VG 0.04 (Vielberth-Gebäude)**

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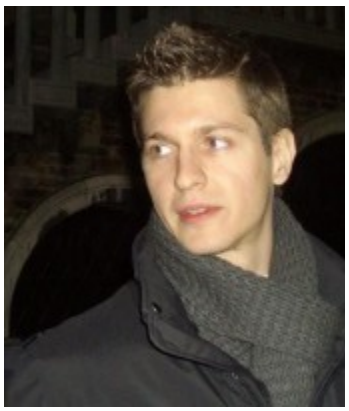

Transcranial electrical stimulation (tES) is a non-invasive cortical modulatory technique, and consists in delivering low-voltage electrical current on specific cortical sites through electrodes. The development of non-invasive brain stimulation techniques has constituted a significant advance in basic neuroscience (Miniussi et al., 2012). Different tES protocols applying alternating instead of direct current (tDCS) have been developed more recently. When a low intensity alternating current is applied, where intensity and frequency of the current vary in randomized manner, the protocol is defined transcranial random noise stimulation (tRNS) (Terney et al., 2008). In general, tRNS leads to a higher neural excitability than tDCS (Antal & Herrmann, 2016). Though the neural mechanisms underlying tDCS are well established (Miniussi et al., 2012), the effects of tRNS on the human visual system have been scarcely investigated. Given the importance of this technique for its applicative properties and neuromodulatory effects, it is necessary to understand the mechanisms underlying the visual improvements when tRNS is applied. In order to assess the effects of tRNS on the visual system, we employed established behavioural paradigms of visual motion perception. The results suggest that tRNS improves visual motion perception by strengthening global processing without affecting the amount of internal noise. These findings uncover fundamental mechanisms underlying tRNS-induced facilitation.