To

Dr. Rafal Marszalek

And the Editors of Scientific Reports

**Re:**

The Interplay of Sensory Feedback, Arousal, and Action Tremor Amplitude in Essential Tremor

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Dear Dr. Rafal Marszalek,

enclosed you find our manuscript regarding the sensory feedback dependent modulation of action tremor amplitude in persons with essential tremor (ET) and the interplay with cognitive arousal.

While it is known for long that target force tremor amplitude can be modulated by manipulation of visual feedback, this is the first study to show that a variation of auditory feedback induces a tremor amplitude modulation in a comparable manner. Additionally, we could show by pupillometry, that persons with ET perceived a higher effort during the higher feedback tasks, as reflected by a significant larger pupil diameter. This could possibly explain the tremor amplification during different types of feedback via central noradrenergic pathways.

Because of the importance of this work in understanding the pathophysiology of action tremor, we decided to submit it as a research article to Scientific Reports. We believe that this work will be of equal importance to researchers, clinicians and health care professionals in order to facilitate new directions in the care of people with ET.

As potential reviewers, we suggest Derek B. Archer (derek.archer@vumc.org), Michiel Dirkx (michiel.dirkx@radboudumc.nl) or Robert Erro (rerro@unisa.it).

On behalf of all co-authors

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Description automatically generated with medium confidence

Jos Becktepe and Julius Welzel