

## Accepted Manuscript

Title: Complex Sparse Spatial Filter for Decoding Mixed Frequency and Phase Coded Steady-State Visually Evoked Potentials

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**Title:** “Complex Sparse Spatial Filter for Decoding Mixed Frequency and Phase Coded Steady-State Visually Evoked Potentials” I would like to concern the following issues about our proposed research:

- Innovation and Significance: We established the model and optimization for a so-called complex sparse spatial filter (CSSF) that efficiently identifies the frequency and phase of SSVEP that is the response to mixed frequency-phase coded visual stimuli. The proposed CSSF enables us to

- a) exclude electrodes that have no or little contribution to SSVEP detection;
- b) reduce the computational complexity because of a simple inner product operation for detection;
- c) achieve high information transfer rate for the 16-target SSVEP BCI.

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