

---

Paper ID: 1570943767

---

Paper Title: Experiment Design for EEG-based Continuous Action Sense of Agency

---

Authors: Arif Widodo, Atsushi Nakazawa and Akio Gofuku (Okayama University, Japan)

---

Email: arifwidodo@unesa.ac.id

---

## Abstract

---

Previous research on EEG-based Sense of Agency (SoA) has identified frequency bands and locations associated with SoA. However, the time appearance of SoA on EEG is rarely discussed. Other studies have linked the relationship between SoA and error-related negativity (ERN), which gives hope for studying SoA in the time domain. As a result, EEG data with time markers that can be analyzed in the time domain is necessary. This research aims to create an experiment game that can provide SoA stimulus while also recording all of the subject's response activities. The initial experiment found that the SoA can be estimated by calculating the subject response movements. Furthermore, as a result of losing agency, the subject's response time is longer in bad moves than in good moves.

---