



## Scheda di Offerta Tesi

**Titolo (provvisorio):** Analysis of Levodopa induced changes in cortical information transmission in Parkinson's disease subjects: a TMS-EEG study

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### Descrizione

#### Motivazione e campo di applicazione

Most neurological and psychiatric condition share, as a common substrate, the alteration of cortical excitability and connectivity. Transcranial magnetic stimulation (TMS) combined with simultaneous high-density electroencephalography (hd-EEG) represents a straightforward way to gauge, directly and non-invasively, cortical excitability and connectivity in humans in virtually any portion of the human thalamocortical system.

#### Obiettivi generali e principali attività

The aim of the thesis is to perform a functional and effective connectivity analysis of brain responses to a transcranial magnetic stimulation TMS in two populations of patients affected by Parkinson's disease and Dyskinesia induced by the assumption of Levodopa. Specifically, in this thesis we want to investigate whether changes in cortical information transmission occur along with the time from assumption of medication.

#### Obiettivi di apprendimento (strumenti tecnici e analitici, metodologie sperimentali)

The candidate will learn to manage, to process and to analyse neurophysiological data (hdEEG signals and MRI images), to perform non parametric statistical analysis and to face source modelling problem.

**Luogo/i in cui si svolgerà il lavoro:** DIBRIS Bioengineering Lab (Via Opera Pia 13)

### Informazioni aggiuntive

**Numero massimo di studenti:** 1