



Máster Universitario en  
Neurociencia Cognitiva  
y del Comportamiento

## **Talk by Dr. Chiara Avancini "Fluctuations in consciousness states across the arousal spectrum"**

~~Desde~~ el Vie, 10/03/2023 - 13:00

Talk: "Fluctuations in consciousness states across the arousal spectrum"

Dr. Chiara Avancini - CIMCYC (UGR)

Date and time: March 10th, 2023, 13:00

Venue: Sala de conferencias 1, CIMCYC

Abstract:

Consciousness is thought to vary continuously from coma and deep sleep to full wakefulness. Spontaneous fluctuations in consciousness levels occur constantly throughout the day and are affected by nonlinear transitions across arousal states (for instance, when we fall asleep). These transitions are accompanied by changes in neural dynamics which in turn affect the way humans process incoming stimuli. The characterization of such neural changes and their effect on cognition have inspired a conspicuous amount of studies on participants whose arousal state deviated from wakefulness at rest. Theoretically, the arousal spectrum is considered a nonlinear continuum ranging from deep sleep to excited states. However, consciousness has mostly been investigated through three major types of deviation from wakefulness at rest: loss or reduction of consciousness resulting from extensive brain damage (e.g. coma), altered states artificially induced either pharmacologically or through hypnosis, spontaneous reduction of consciousness (e.g. sleep or drowsy state). Therefore, it is evident that consciousness research has focused on either loss of consciousness or on altered states that arguably represent only a part of what constitutes human experience. In fact, many individuals experience high-arousal daily through practicing physical exercise to various degrees of intensity and at the phenomenological level report changes in the way they perceive the environment around them. We are asking ourselves: is high-arousal an altered state of



consciousness? In this seminar, I will introduce the state of the art of consciousness research and I will show data from ongoing studies carried out at the Human Brain and Cognition Lab. Our new data show a parallelism between high-arousal and the drowsy state suggesting that high-arousal might indeed be an altered state of consciousness. In addition, I will discuss future perspectives and how we may further investigate this broad research question.