NIN is inviting you to attend the Neuroscience Symposium on Friday April 1, 2022, 16.00 hrs.

Colloquium room & Online:
https://us02web.zoom.us/j/88627099773?pwd=R2Q1S3BNRFdFSHVUajhYRXhBTVJOQT09

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The meeting area will be open at 15.45 hrs.
Host: Eus van Someren e.van.someren@nin.knaw.nl

Guest Speaker:
Francesca Siclari
Attending physician and Principal Investigator
Centre d'Investigation et de Recherche sur le Sommeil (CIRS)
University Hospital Lausanne (CHUV)
Switzerland

Title: Seeing without stimulus: the dreaming brain.

Abstract:
Each night, when we fall asleep, we progressively disengage from the external world until we cease to perceive it and to act upon it. Despite this sensorimotor disconnection, in our dreams we perceive and act, and although we do so in a purely imaginary world, our experiences bear so much resemblance with the real world that we almost invariably take them for real. How does the brain create such a real-world analogue, and why? In this talk I will 1) review the phenomenology of dreams, describing both similarities and differences with waking experiences, 2) present the results of recent studies on the EEG correlates of dreams in both healthy subjects as well as in patients with sleep disorders (parasomnias, insomnia) and 3) conclude by outlining future lines of research in this field.

Biography:
Dr. Siclari is a senior neurologist at the University Hospital of Lausanne, in Switzerland, where she directs a research group investigating the neural basis of dreaming. To this aim, she employs neurophysiological techniques (high- density EEG recordings, evoked potentials, closed-loop acoustic slow wave modulation) combined with extensive sampling of dream experiences through serial awakening paradigms. She also strongly relies on clinical observations that she makes in her practice as a sleep medicine specialist.
Using high-density EEG recordings combined with awakenings to probe dreams, she identified, for the first time, a restricted neural signature (i.e. a localized activation of a posterior cortical zone) that was common to both rapid eye movement (REM) sleep and Non-REM sleep. She was also the first to 'image' local brain activations corresponding to broad categories of dream contents in full-fledged sleep , including thoughts, faces, places, movement and speech, indicating that the cortical representation of 'perceptual' categories is similar between sleep and wakefulness (Siclari et al. Nature Neuroscience 2017). Her group subsequently discovered how different slow wave synchronization processes relate to subjective experiences during sleep (Siclari et al. J Neuroscience 2018; Bernardi et al. J Neurosci 2019) and outlined EEG determinants of subjective sleep depth (Stephan et al. Curr Biol 2021).

Her work uniquely contributes to a fundamental understanding of sleep quality, which is a key component in the risk, severity and progression of many brain disorders.