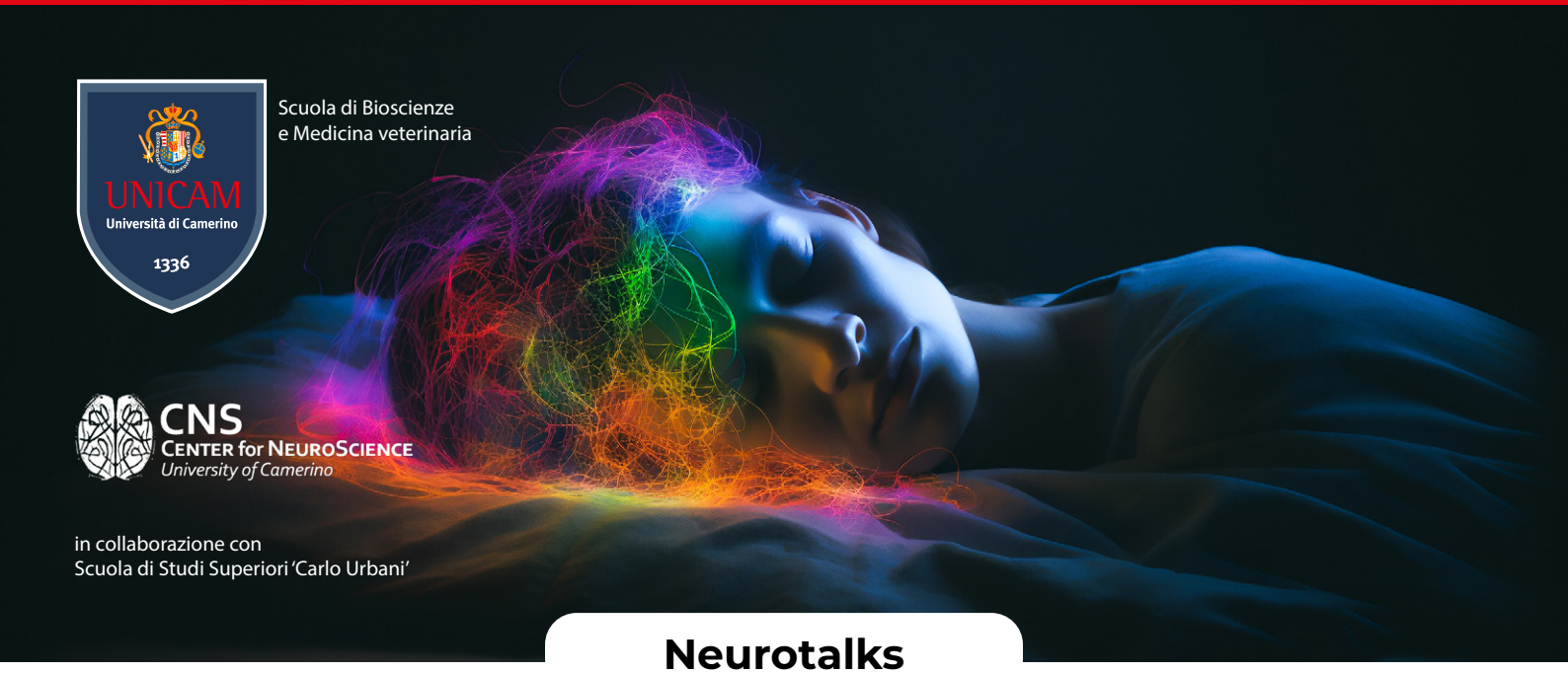

Neurotalks

Sound-based Neuromodulation of the Sleeping Brain:
Basic Principles and Emerging Frontiers

Federico Salfi
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Dipartimento di Scienze Cliniche Applicate e Biotecnologiche (DISCAB)

Camerino Monday, **April 13, 2026**, 3:00 PM
Polo Sant'Agostino - Aula 2 - via Sant'Agostino

speaker invited by michele.bellesi@unicam.it

Sleep is not a passive state, but an active neurophysiological condition that supports the stabilization and transformation of newly acquired memories. This seminar will provide an overview of the electrophysiological mechanisms underlying sleep-dependent memory consolidation, setting the stage for a discussion of two prominent sound-based neuromodulation approaches: pink noise stimulation and Targeted Memory Reactivation (TMR). By tracing the historical development of these techniques, the seminar will examine the behavioral and neurophysiological evidence supporting their application. It will then turn to their emerging frontiers, shaped by the latest advances in real-time signal modeling and wearable EEG systems, ultimately highlighting the potential of recent technological developments to extend sleep neuromodulation beyond the laboratory into more accessible, home-based applications.

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