SEMINARIO

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Predicting neurological recovery from coma after cardiac arrest using the FMM approach

Abstract: The problem of predicting the neurological recovery of patients after cardiac arrest from their EEG signals will be addressed. The analysed signals belong to a sample of nearly 1,000 comatose patients that the ICARE consortium made public for the George B. Moody PhysioNet Challenge 2023.

The approach involves decomposing the EEG segments into Frequency Modulated Möbius (FMM) waves. The parameters of each wave capture its location and sharpness across all channels, as well as its amplitude and symmetry in each channel. Using these parameters, we generate features that encapsulate the fundamental characteristics of an EEG. This results in an interpretable and practical method for identifying EEGs indicative of poor patient prognosis. Moreover, we will also focus on some algorithmic advances made to meet the computational limitations imposed by the challenge.

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