

September 3

**EEG Source
Localization**

EEG Source Localization in the Context of Epilepsy: A New Multiway Temporal-Spatial-Spectral Analysis

Epilepsy is one of the most common neurological disease, approximately 65 million people diagnosed with epilepsy in the world. For the removal of epileptogenic region in particular and epilepsy diagnosis in general, accurate localization of the epileptic focus is highly meaningful. In this talk, we would like to introduce a robust method for EEG source localization based on a new multiway temporal-spatial-spectral (TSS) analysis via spectral graph theory and tensorial blind source separation. In particular, instead of using the temporal behavior of sources (*i.e.*, time variable), we apply the graph wavelet transform (GWT), which is one of the most powerful vertex-frequency tools for graph signal processing (GSP), to the space variable in order to exploit information of the spatial domain. Numerical experiments on both simulated and real data are carried out to evaluate the model performance of the TSS analysis in comparison to space-time-frequency (STF), space-time-wave-vector (STWV) analysis.

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Venue: G2-315, 144 Xuan Thuy, Cau Giay, Hanoi

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Lê Trung Thành received B.Sc. and M.Sc degree in Electronics and Telecommunications from University of Engineering and Technology (UET), Vietnam National University, Hanoi (VNU) in 2016 and 2018 respectively. He is now a research/teaching assistant at the Advanced Institute of Engineering and Technology (AVITECH) within VNU-UET. His research interests include biomedical signal processing, graph signal processing, subspace tracking and tensor analysis.