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The Measurement of Relationships in Brain Networks

The study of brain networks in epilepsy is based, to a large extent, on pairwise measurements of relationships. Such pairwise relationships can be estimated from brain electrical activity measured from the scalp with routine EEG, from intracranial electrodes during monitoring for epilepsy surgery, or with functional MRI (fMRI) measurements. The normal brain is characterized by a resting state network defined recently by fMRI measurements. Brain networks may be studied by pairwise relationships in brain electrical activity that are measured in this study by human intracranial EEGs during the resting state. Some notable measures to study relationships: coherence, mutual information, approximate entropy, and others will be used.

This talk is based on joint work with Dr. Hitten Zaveri, Department of Neurology, Yale University School of Medicine.