

1135-92-202

**Michelle DeDeo\*** (mdedeo@unf.edu), 1 UNF Dr., Department of Mathematics & Statistics, Jacksonville, FL 32224, and **Maanasi Garg**, 1 UNF Dr., Mathematics & Statistics, Jacksonville, FL 32224. *Seizure Prediction using Spectral Density Analysis on Pediatric EEGs.*

In this paper, the authors analyzed specific frequencies within the gamma band that contribute a relatively high amount of power to the electrical activity during pediatric patients' seizures in order to determine if seizure (pre-ictal) activity was present before a seizure (ictal) event. In order to accomplish this, we evaluated the power spectral density graph not over a range of frequencies, but at specific single frequencies using a variation of log power spectral density. The analysis then compares the log power spectral densities of each patient's ictal and inter-ictal episodes. This allowed identification of frequencies within the gamma band to contribute high amounts of power during seizures relative to the amount of power they contribute normally. In addition, all of the EEG recordings containing each patient's seizures were epoched to extract the "trials" of his study using EEGLAB, a MATLAB add-on, and ERP analysis was performed in an attempt to predict pre-seizure activity. Once the seizure files were epoched, the potentials (amplitudes) of each trial were color-coded and converted to a rectangular color. Proper seizure prediction through a medical device tuned to a particular patient would allow for seizure patients to be given warning before their seizures begin. (Received August 08, 2017)