ABSTRACT

Accurate detection of fetal heart signals during pregnancy has the potential to provide information on possible fetal cardiac disease. By analyzing standard ECG recordings derived from leads placed on the abdominal, we determined that fetal signals have very low power relative to that of the maternal ECG, and they are mixed with several sources of interference *(noise)* so it can be obviously to diagnose [5].

The FECG consist of QRS complex, P wave and T wave component that the characteristic of ECG waveform and morphologically similar to that of the adult ECG [7]. To gain pure FECG, some mechanisms to remove noises are needed during recordings, where maternal ECG is one of the noises and have the biggest contribution. We extract fetal ECG from the abdominal ECG with one of method, wavelet. Which Wavelet transform that used is DWT (Discrete Wavelet Transform).

On this final assignment, we showed that the observed waveforms were not noise, but were actually the fetal ECG with good shape, with minimum noises. Wavelet method can be a powerful tool to extracts fetal ECG, so that used to provide information on diagnose cardiac disease. The quality of results extraction signal, are measured by MSE in time and frequency domain. For experiment with input signal abdominal 2, best result of extraction is with coif1 level 4. And for experiment with input signal abdominal 5, best result of extraction is with db4 level 3.

Keywords *:* Fetal Electrocardiogram (FECG), Discrete Wavelet Transform