Extraction of fetal ECG signal

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Fetal electrocardiogram (FECG) extraction has an important impact in medical diagnostics during the mother pregnancy period. Since the observed FECG signals are often mixed with the maternal ECG (MECG), the separation process of the ECG signal sources from the observed data becomes quite complicated. One of its complexity is when the ECG sources are dependent[1], in this paper, we extract the FECG component by a new approach of blind source separation (BSS) for both independent and dependent ECG signal source. We validate our appoach on both real and synthetic ECG signals. Our results demonstrate the effectiveness of the proposed approch in extracting the FECG component from abdominal signals. The results also show that the approch is capable of extracting the FECG even when it is depend to the MECG [2].

Références

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[2] A. Keziou, H. Fenniri, A. Ghazdali, E. Moreau, New blind source separation method of independent/dependent sources, Signal Processing, vol. 104, pp. 319-324, 2014.

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