Abstract

Sleep apnea is a potentially serious breath disorder. This can be detected using a test called as Polysomnography (PSG). But this method is very inconvenient because of its time consuming and expensive nature. This can be overcome by using other methods like Respiratory rate interval, ECG – derived respiration and heart rate variability analysis using Electrocardiography (ECG). These methods are used to differentiate sleep apnea affected patients and normal persons. But the major drawback of these is in performance. Hence, in this paper this disadvantage is overcome by considering Sequency Ordered Complex Hadamard Transform (SCHT) as a feature extraction technique. A minute to minute classification of thirty – five patients based on sensitivity, specificity and accuracy are 93.74%, 96.15% and 95.6%.

References

1. P. Chazal, T. Penzel and C. Heneghan, “Automated Detection of Obstructive Sleep
Classification of Sleep Apnea using ECG-Signal Sequency Ordered Hadamard Transform Features


10. Laiali Almazaydeh, Khaled Elleithy, Miad Faezipour, “Obstructive Sleep Apnea Detection Using SVM-Based Classification of ECG Signal Features”, 34th Annual International Conference of the IEEE EMBS San Diego, California USA, 28 August - 1 September, 2012


18. G. Sannino, I. De Falco and G. De Pietro, An automatic rules extraction approach to support OSA events detection in a mHealth system, IEEE Journal of Biomedical and Health Informatics (2014), will be published.


**Index Terms**

Computer Science  
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