

NONINVASIVE DETECTION OF THYROID DYSFUNCTION USING BICOHERENCEPLOT AND BICOHERENCE METRIC OF HRV DATA

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Abstract

Heart rate variability (HRV) is the variation of heart rate about its mean value Heart rate in beats per second is the reciprocal of the period between successive R peaks of the Electrocardiogram (ECG) in seconds. .HRV has been widely used as a powerful noninvasive marker to diagnose various cardiac and non-cardiac disease states. The objective of this paper is to detect the presence of Thyroid dysfunction (disease) using Bicoherence-plots and bicoherence metric using Higher Order spectral analysis. (HOSA) The plots and metrics are obtained for various lengths of data segments and further the suitable length of the data segment for analysis is found. With the detected suitable data segment length the Thyroid dysfunction (disease) subjects have showed significantly higher values as compared to the healthy subject which may suggest the use of bicoherence-plots and bicoherence metric to detect Thyroid dysfunction noninvasively.

Keywords: HRV, Bicoherence, Bicoherenceplot, Thyroid,

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