圧電センサアレイによる着座中の心拍・呼吸計測システムの開発

Development of Measuring System for Heartbeat/Respiration during Seated by Piezoelectric Sensor Array

キーワード：心拍・呼吸、圧電センサ　/key words: heartbeat/respiration, piezoelectric sensor

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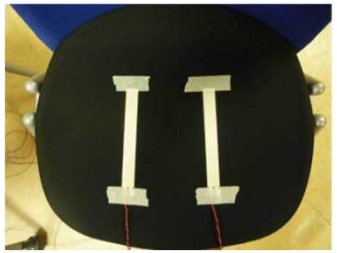
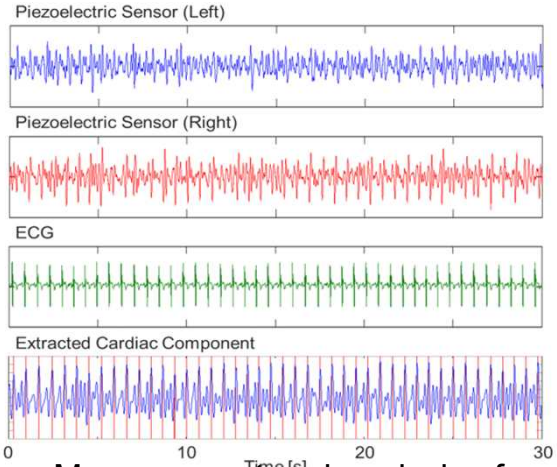
●家庭における日常的な健康管理の機器・環境の提供

体動や外部からの振動をキャンセルしつつ心拍・呼吸成分を選択的に抽出する圧電センサアレイを構成し、それより心拍・呼吸変動を計測・解析する安価で簡便なシステムを開発することで、体重計、体温計、血圧計に続く家庭における日常的な健康管理の機器・環境の提供を目指す。



Piezoelectric sensor array



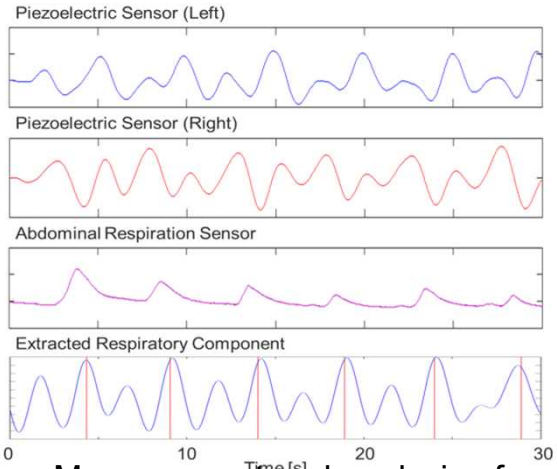
Measurement and analysis of heartbeat component

●期待される今後の展開

環境を問わずヒトの心拍・呼吸を選択的に抽出すれば、外部からの振動が大きな環境、例えば、走行中の車中における運転手の心拍・呼吸計測といった応用も見込まれるなど、日常生活の中での健康管理を行える場面が広がる。将来的には、システムから得られる生体情報を基にした健康管理環境整備の促進といったライフイノベーションに繋げることも可能である。

Provision of equipment or environment for daily health care in the home: Constitute piezoelectric sensor array which can extract heartbeat and respiration signals selectively with canceling body movement or vibration from outside. By developing an inexpensive and straightforward system which can measure and analyze heartbeat and respiration signals, we will provide equipment or environment for daily health care in the home, as same as scale, thermometer, and sphygmomanometer.

Prospective future development: Well-establish extraction of heartbeat and respiration signals regardless of environment, it can enable for spreading a scene of health management in daily life. For example, application of measurement of heartbeat and respiration signals in an environment with significant vibration from outside, such as monitoring a driver in a running car, is also expected. In the future, it can be connected with life innovation such as the promotion of the health care environment or maintenance based on biological information.



Measurement and analysis of respiration component