A Model Based non-Invasive Physiological Data Acquisition Technique

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Inventors

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Background

The most advanced Body Sensor Networks (BSNs) consist of wireless electronic sensors that are worn by patients and communicate wirelessly with a smartphone or computer. These sensors can be invasive or they must be put on every time a patient is monitored, which can be especially inconvenient for non-human patients. Currently, no non-invasive method of physiological monitoring exists that does not involve the application of electronic sensors to the skin.

Invention Description

Researchers at Arizona State University have developed a technique to sense physiological signals without installing sensors on a patient. When two people are in close proximity of each other, the electrocardiography (ECG) signal of one person may be coupled to the electroencephalography (EEG) signal of the other person. This non-invasive technique uses math modeling and electrical coupling to read an individual's ECG through the EEG of whoever is conducting the monitoring.

Intellectual Property Status:
Pending

Potential Applications

- Healthcare/Veterinary Care
- Biometric Security Systems
- Haptics

Benefits and Advantages

- **Efficiency** – Saves doctors and veterinarians the time of applying sensors to a patient and the cost of using multiple devices to monitor each patient.
- **Convenience** – Patients are no longer annoyed by having to wear sensors.
- **Increased Protection** – Additional safeguard when combined with other biometric security devices.

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