4th Kuala Lumpur International Conference on Biomedical Engineering, vol. 21(1), 2008, pages 591-594

Measuring blood pressure using a photoplethysmography approach

Abstract

Blood pressure is often measured using a device called a sphygmomanometer, a stethoscope, and a blood pressure cuff. All the existing manual or automatic measuring techniques of blood pressure are based on this principle, which is not convenient for continuous monitoring of blood pressure. In this paper, we proposed the regression model which could estimate unspecified people's systolic blood pressure (SBP) conveniently and continuously and checked its accuracy with blood pressure cuff. The method for estimating each individual SBP by using only pulse wave transit time (PWTT) has been studied, but it is difficult to estimate unspecified people's SBP with the method using only PWTT. This study examines the relationships between arterial blood pressure and certain features of the photoplethysmographic (PPG) signals from 10 healthy subjects. The experiment involved three sessions, which is the resting period, exercise period and recovery period.

Keywords — Blood Pressure (BP), Electrocardiography (ECG), non invasive, Photoplethysmographic (PPG), Pulse wave transit time (PWTT)