



## P89 Non-invasive Blood Pressure Measurement System Using Three-axis Tactile Force Sensor

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### ABSTRACT

Blood pressure is most important parameter reflecting hemodynamic factors, however it is continuously variable in 24 hours. Here, we made a non-invasive and continuous BP measurement device using a three-axis tactile force sensor. All the data was collected every 2 min for the short-term experiment, and every 10 min for the long-term experiment. In addition, the effects on the BP measurement of external physical factors such as the tension to the radial artery on applying the device and wrist circumference were evaluated. A high correlation between the measured BP with the proposed system and with the cuff-based non-invasive blood pressure, and reproducibility, were demonstrated. All data satisfied the Association for the Advancement of Medical Instrumentation criteria. The external physical factors did not affect the measurement results. In addition to previous research indicating the high reliability of the arterial pulse waveforms, the present results have demonstrated the reliability of numerical BP values, and this implies that the three-axis force sensor can be used as a patient monitoring device.

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