



## PROCEEDINGS PAPER

# Body measurement system using white light projected patterns for made-to-measure apparel

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## Paper Abstract

A non-contact body measurement system (BMS) is under development for use in making made-to-measure apparel, and for other applications related to body measurement. The BMS design is discussed which consists of six stationary structured-light projectors and six CCD cameras utilizing a phase-shifting technique. The solution for calculating three-dimensional surface points of a human body from the camera images is described. A statistical error analysis is summarized for the phase measurement error due to image noise. The phase errors due to image and pattern quantizations are analyzed. the effect of phase measurement error upon the three-dimensional point solution is shown in terms of the system parameter values. An operating development implementation of the BMS is described and pictured. Contour plots of test subjects taken with this system, showing digitized three-dimensional surface segments, are presented and discussed.

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