

Characteristic Indices of Young Men’s Neck Based on Collar Fitness

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Abstract

This research carries out non-touched anthropometric measurements on 200 male university students aged from 19-26. 10 measurements relevant to the body neck were drawn in considering the necessary measurements in the pattern design of the fashion collar, This research utilizes the SPSS software to carry out a frequency distribution analysis and cluster analysis for the sample. 5 characteristic indices were elected in a statistical approach. These characteristic indices provide more reference measurements to the structural design of the men’s fashion collar, it can be used to serve as the establishment of specification series for men’s wear and for ready-to-wear production.

Keywords: Apparel Collar; Fitness; Data Analysis; Characteristic Indices

1 Introduction

Apparel’s fitness is an important factor which affects apparel’s comfort. Currently, the analysis of different body characteristic parameters, the establishment of a national human database, the existing modification and amendment of clothing size standards and other research are very hot topics aiming to enhance apparel’s fitness and comfort.

As we know, when we carry out the apparel collar’s pattern design, many detailed sizes of body neck must be used. But after we check with the “national apparel size standard” [1], we only discovered that only one size relates to the neck, i.e. the root neck circumference. In fact, there is an obvious difference of body neck among different individuals in terms of shape and configuration. Even if two guys have the same size in neck circumference, their neck widths, neck lengths, and mid-neck circumferences and other sizes may not be the same. Therefore the acquisitions of detailed body sizes are very important for apparel collar design [2].

Furthermore, apparel design needs the support of human body data. The design of apparel collar must accord to body neck sizes. In order to have more objective understanding of the

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human neck, we have to digitalize the body neck's characteristics. In this research, we carried out experiments to discover the key indices which can distinguish the body neck characteristics, and offers a theoretical foundation for apparel collar's fitness [3].

2 The Basic Principles for Choosing Body Characteristic Indices

According to the basic selection principles of national sizes standard, we have to adhere to the following principles when selecting the body characteristic indices suitable to apparel MTM [4].

(1) The body characteristic indices have to meet the objective of changing laws of human body types and garments to practically produce experience and conditions, and must be easily measured and obtained.

(2) Have mass coverage and have maximum effect to respond and distinguish the crowd.

(3) Though them, we can simply and easily figure out the sizes of the items which are not easy to obtain through body measurements.

(4) Facilitate application and promotion.

(5) Have the ability to connect with domestic and international standards.

3 Experiment on Anthropometric Measurement of 3D

3.1 Equipment

This experiment utilizes the non-touched 3D human body laser scanner made by German TecMath Corporation to carry on human body data acquisition. This scanner can scan the 2.1 m high region in 8~10 seconds, the resolution may reach 5 mm, measuring accuracy for ± 2 mm (Fig. 1).

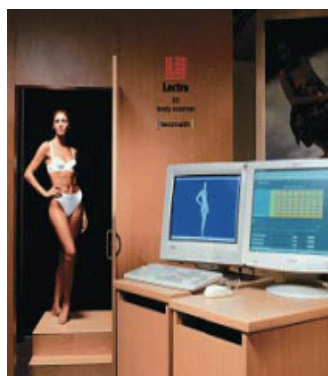


Fig. 1: Non-touched 3D human body laser scanner

3.2 Scope of Experiment

The survey was conducted on 200 male university students aged from 19~26 years old.