

Pictures of the fitting are shown in Fig. 9. When Subject A in the Low Score group wore the standard jacket, the jacket pulled tight in the upper back area and diagonal wrinkles were formed between the neck and the bottom of the armhole. The hem line was pulled up at the center back. In the altered jacket, the wrinkles were improved and the hem line became straight. The subject mentioned that the standard jacket was tight at the upper back, but the altered jacket was very comfortable. When Subject B in the High Score group wore the standard jacket, the jacket sagged at the lumbar vertebra area and horizontal ripples formed across the upper back. The sag and ripples were improved in the altered jacket, although most of the grade points moved a distance of less than 1cm.

These results suggest that it may be possible to use body type grade in practice, although more examination and discussion are needed. First, improvements of the fit should be proven scientifically by pressure or sensory evaluation methods. Evaluation of the fit in individuals with lower or higher scores than the present subjects must be done, to consider if the distance is appropriate or not. A higher degree of alterations, which means that the grade points moved larger distances, might be needed. In the previous study, similar results for the factor of forward or posterior shoulder joint were obtained. In the future, the other factors will be examined and the grade rule for body type grade will be established.

References

1. Lee, S., Kunz, I.G., Fiore, M.A., Campbell, J.R. (2002): "Acceptance of Mass Customization of Apparel: Merchandising Issues Associated With Preference for Product, Process, and Place", *Clothing and Textile Research Journal*, Vol.20, No3, pp138-146
2. Shimosaka, C. and Matsuyama, Y. (2007): "A Research of Mass Customization of Apparel for Consumer Satisfaction" *Otsu Women's University bulletin. Home economics*, Vol. 43, pp.105-106.
3. Ashdown, P. S. and Dunne, L. (2006): "A study of Automated Custom fit: Readiness of the technology for the apparel industry", *Clothing and Textile Research Journal*, Vol.24, No2, pp.121-136
4. Mochimaru, M. and Kouchi M.: "Statistics for 3D human body forms", *SAE Digital Human Modeling for Design and Engineering International Conference and Exposition*, 2000.
5. M. Mochimaru and M. Kouchi (2009): "Statistics of 3-D body shapes using PCA or MDS and their applications", *17th World Congress on Ergonomics (IEA 2009)*
6. Ono, K.(2004): "Pattern Making", *Bunka Publishing Bureau, Tokyo*, ISBN 4-579-10714-4
7. Watanabe, K.,(2008): "Three Dimensional Body Measurements and CAD Pattern Making", *Abstract book- Research paper of International Federation for Home Economics XXI. World Congress, Lucerne, Swiss*, pp.22