

The Application of Fold Modeling in Three-Dimensional Cutting

Li Chen, Yingyi Lin

Design and Creativity College of Wenzhou Vocational and Technical College, Wenzhou,
325000, China

Abstract

The use of folds is one of the most important means and forms in draping. The forms of expression in draping are ever-changing, with laws to follow and unconstrained free evolution. The understanding and application of fold modeling can enrich the modeling language of draping, which has an important inspiration and reference for inspiring the application of draped modeling and increasing the expression of clothing design concepts.

Keywords

Fold modeling; Draping; Application.

1. Introduction

Folds are an important element in clothing design, and fold modeling is an important means to express the beauty of clothing shape and structure. Fold modeling greatly enriches the modeling language of clothing, especially in the application of clothing draping, folds exist as a unique form of expression. The sense of space makes the clothing rich in three-dimensional sense and has a powerful effect of reshaping the human body. Therefore, it is widely used in the design of draped clothing and the design of creative clothing, which greatly meets the needs of clothing draping diversity. Mastering the application of fold modeling is of great significance for cultivating the designer's independent consciousness and three-dimensional thinking.

2. The Shape Characteristics of Folds

Wrinkle modeling is to use the material characteristics of the fabric itself to form a new decorative line by using fabric modeling methods such as folding, shrinking, stacking, and winding, which makes the clothing more design and three-dimensional in shape. Some design surface features are also one of the fashion design techniques to show artistic style. The design of countless folds in the two-dimensional clothing fabric is to endow the flat fabric with three-dimensional modeling characteristics, making it capable of shaping three-dimensional space when it is hung on the human body, and at the same time, it can form special texture wrinkles on the fabric. To achieve the application of secondary reconstruction of fabrics, so that clothing presents different visual effects. Many clothing brands at home and abroad express the individual style and effect of brand clothing through the use of pleated shapes on clothing, which is deeply memorable. Ordinary clothing can also make simple clothing show different artistic effects by adding folds to the clothing. The plane effect of the folded shape usually changes with the movement of the human body, and this change is the unique charm of the combination of plane and three-dimensional. The characteristics of pleated shape can be divided into structural pleated shape and decorative pleated shape.

2.1. Structural Pleated Shape

One of the important principles of the application of pleated shape in draping cutting is to use the principle of dart transfer to transfer the visible dart on the body to the pleated shape, and combine it with the dividing line according to the needs of the style. This kind of shape applied

in combination with the clothing structure belongs to the structural wrinkle shape, that is, through the "volume" and "heavy volume" of the pleats, the layered and three-dimensional sense of the clothing is produced. The folded shape of "yield" can not only be used to deal with the surplus and deficiency of clothing, rationalize the structure of clothing, but also achieve the effect of shaping and fitting, fully showing the curvaceous beauty of the human body. In Figure 1, all the savings in the chest and waist are transferred to the front chest, and the excess savings are transformed into many fine pleats, forming a diagonal line trend, presenting a decorative effect, making the simple V-neck clothing The shape immediately became vivid, enriching the design language of the clothing. The application of the "heavy volume" of the pleated shape in the three-dimensional cutting can create a more exaggerated clothing shape.



Figure 1. "Yield" fold shape



Figure 2. "Heavy volume" fold shape

2.2. Decorative Pleats

The decorative folds in the three-dimensional cutting are only the style and shape design and do not include the saving in it. They only play a decorative role. The vertical cutting operation is relatively simple, and there is no need to do the step of dart transfer. It's good to show the shape characteristics. The draped shape with decorative folds will produce three-dimensional, textured and dynamic effects, and these effects are attached to the person, so they will produce visual effects and rich associations on the shape. For example, the decorative fungus and ruffles on the neckline, cuffs and other parts of the clothing can increase the softness and playfulness of women. It increases the elegant feeling of the clothing, and some parts of the clothing are pressed and pleated.

Structural folds are more commonly used in drape-cut shapes. Compared with decorative folds, they can better show the characteristics of drape-cutting, express the designer's ideas, and show the individuality of clothing styles. so it is loved by designers.

3. Types of Pleated Shapes

As one of the important languages of clothing modeling, folds can show the unique design concept and style of clothing. Different folds will also bring different visual effects to clothing. The three-dimensional effect has a great relationship. There are various forms of folds commonly used in clothing draping, which can be roughly divided into two types: regular folds, irregular folds, and sewing folds.

3.1. Vanlige Folder

Regular folds refer to two or more folds that are consistent in size, shape, arrangement, direction, etc, and have rules to follow. In the application of regular folds in three-dimensional cutting modeling, it is necessary to combine the type of clothing, the occasion of clothing, the thickness of clothing fabrics, and the characteristics of suitable groups of clothing to select appropriate folds. It can not only express the unique appearance of clothing. can also convey the profound connotation of clothing. The most common shape of regular folds is the folded fold. This kind of fold shape is also after the transfer and addition of the saving amount, by using the arrangement and folding in different directions, the clothing fabric presents a strong sense of hierarchy and three-dimensionality, which can strengthen the visual effect of the clothing design. In the application of the vertical cutting of the dress, it usually uses relatively fine and neatly arranged folded folds, pleats with the same direction and size, and the visual effect is relatively regular and neat, which is mostly manifested in the chest, shoulders and waist of the dress. , which can reflect the sense of rhythm and layering of clothing, suitable for selection of pleats less than or equal to about 1cm, as shown in Figure 3. This ruffled shape also has certain restrictions on fabrics, and it is more suitable to be displayed with light and thin fabrics, such as tulle, satin, silk, lace and other fabrics. The folds larger than 1cm can increase the fullness of the chest shape of the clothing, which is suitable for the body with smaller chest. Vertical folds can make the human body appear slender, visually increase the height of the human body, and make the body thinner; oblique folds have a divergent and progressive decorative effect, as shown in Figure 4; twisted folds The shape seems to be a whirlpool that keeps spinning, which vividly highlights the dynamic shape of the clothing, as shown in Figure 5. To sum up, the application of folds in draping can not only pave the way for the overall clothing, but also can be used as a design point to use a small area of decoration in clothing modeling, which can make plain clothing exude colorful artistic beauty.



Figure 3. Fine folds

Figure 4. Diagonal folds

Figure 5. Twisted folds

3.2. Irregular Folds

Irregular folds refer to the fact that the texture and length of the folds in the clothing modeling have no rules to be found. It is particularly important to stimulate the designer's creative inspiration and enrich the creative methods of tailoring. Irregular folds are mostly used in local modeling and creative clothing modeling in the application of drape cutting. In addition, there are some unique draping structures and shapes, which are formed during the production process, while making improvements and seeing the effect at any time, which will be of great help to inspire the innovative modeling ability of draping designers. The famous Japanese fashion designer Yohji Yamamoto's clothing creations are mostly the use of irregular fold modeling lines. He will place the fabrics on the avatar, so that the fabrics show a natural flow

and weight, and the folded wrinkled textured fabrics achieve three-dimensionality. The sense of space creates another space between the garment and the body, making the garment full of tension and personality. The picture below is to use the twisting and folding of the fabric to form irregular folds to express the unique creative concept of clothing. See Figures 6 and below.



Figure 6. Asymmetrical folds

3.3. Stitched Pleats

In the application of pleated clothing, there is also a special type, that is, sewing pleats. It uses a sewing process, and the reverse side of the fabric is condensed by hand or machine to form uneven, uneven, uneven surfaces on the surface of the fabric. Folded shapes with texture changes, as shown in Figures 7. The stitched folds have a strong three-dimensional effect, a large visual impact, and a wide variety, breaking the monotony and dullness of clothing fabrics, increasing the texture effect of the fabrics, and enriching the changes in clothing design details, it is a modeling design technique that changes the texture of the fabric and recreates the fabric. The large-scale application of stitched folds can form a fashionable effect of fabric reconstruction, giving the garment a special shape change as a whole. The use of a small area, through changes in the density, distance, and angle of the sewn folds, enriches the design details and also increases the sense of interest in the clothing. In addition, the size and shape of the sewing patterns vary widely, and the combination methods and stitching methods vary widely, which will also make the style of the clothing very different, which will produce unexpected effects.

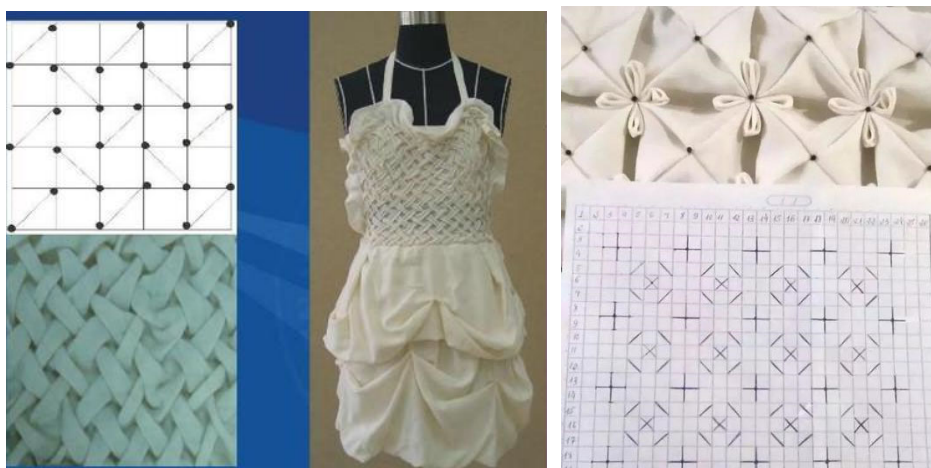


Figure 7. Stitched pleats

4. The Application of Fold Modeling in Clothing Three-Dimensional Cutting

As mentioned above, one of the important principles for the application of pleated modeling in draping is to use the principle of dart transfer to design according to the human body structure, and to transfer the amount of visible darts on the body to the pleated shape. The cross-folded top in the picture below is a typical case of using the chest darts and waist darts of the front body to transfer. The folds of the darts not only save the transfer processing, but also enrich the overall shape design as decorative lines. A three-dimensional shape, the back piece is omitted. The following figure 8 cross pleated top is an example for operation application.

4.1. Grey Fabric Preparation

This cross pleated top needs to prepare a piece of grey fabric with a length of 60CM and a width of 70CM, and draw the bust line and the front center auxiliary line, as shown in the figure below, and analyze the structure according to the style diagram on the man stand, and use a red tape to stick out the front parallel to the front. Several rows of intersecting styling lines, as shown in Figure 9.



Figure 8. Collection Figure

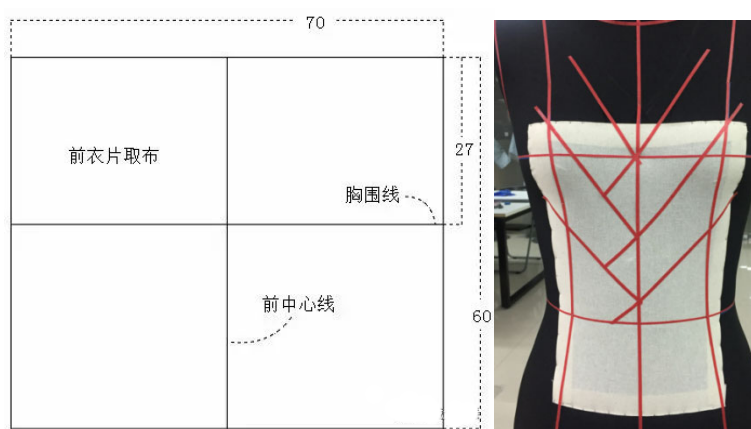


Figure 9. The amount of grey cloth and the position of the marking line

4.2. Operation Steps

First, put the cut grey cloth on the avatar, make the first pleat after leveling the shoulders, and paste the auxiliary line, as shown in Figures 10 and 11, then cut it 1cm below the auxiliary line to make the second fold pleats, as shown in Figures 12 and 13. And so on, make the second and third sets of pleats, as shown in Figure 14, 15, and 16, then trim off the excess pleats, and tidy up several sets of pleats on the body. The final effect is shown in Figure 17. In the vertical cutting

operation of this garment, it should be noted that the distance between the folds of the body shape should be consistent, the fold lines formed by the cross folds should be straight, the upper and lower fold lines should be parallel, and the margin inside should be trimmed cleanly, otherwise it will affect the modeling effect.

**Figure 10. Step1****Figure 11. Step2****Figure 12. Step3****Figure 13. Step4****Figure 14. Step5****Figure 15. Step6****Figure 16. Step7****Figure 17. Step8**

5. Conclusion

Pleated shape is an important shape element of drape cutting, and it has a personalized form of expression. In the process of draping cutting, the fold shape design of the clothing on the man-stage can intuitively experience the rich changes in the fold shape. A sense of art and space. Therefore, studying the application of folds in the three-dimensional modeling of clothing is of great significance to the modeling changes and application design of three-dimensional tailoring.

References

- [1] T.D. Yu YaNan: Research on the application of draping in dress design, Shandong Textile Economy, (2019).No 8, P.61-64.
- [2] T.D. Shi Jing, Visual expansion of garment pleating design , Textile Journal, (2010), No 6, P.110-113
- [3] T.D.Yu LinYan: pplication of pleats in draping plastic technique in dress design ,Journal of Donghua University, (2011), P.128-134.
- [4] T.D. Wang Wei: Application and innovation of pleats in modern clothing design, ,Light Industry Technology, (2012), No 3, P.104-105.
- [5] T.D. Jiang HongYing: Analysis of the evolution of clothing pleat elements and the three-dimensional composition methuod, Textile Journal, (2011).No 11, P100-105.

- [6] T.D. Hu Xiao: Application of pleated design in clothing draping teaching, Art Science and Technology, (2015),No 11, P.269-270.
- [7] T.D. Huang WenPing: Application analysis of silk tangle analysis method in draping of pleated garments, Journal of Jishou University (Social Sciences edition), (2016),No 12, P.134-136.
- [8] T.D. Zhang Ting, Liu DongYun: Research on the application of folding techniques in clothing vertical cutting, Textile Herald, (2019).No 9, P.73-75.
- [9] T.D. Jiang XueNa: Explore the application of folding techniques in clothing vertical cutting, Textile Report, (2018),No12, P.56-57.
- [10] C.H. Zhou Xin: Innovative research on pleated elements in fashion design based on deconstruction style, (China 2020).No 3, P.207-209.