Fashioning Movement

a new approach to Fashion Design

Christiane Luible, HEAD – Genève

Caecilia Charbonnier, HEAD – Genève, Artanim

The Swiss company Odlo supported this project with sample garments, digital 2D patterns, fabric samples and their professional athletes

In Fashion Design, clothing can be understood as interactive envelop or "second skin" for the complex 3D shape of the human body. In the search for ever-new body envelopes various design methods have been developed. Emerging pieces of clothing serve to cover up, to reveal or to accentuate the body or parts of the body and eventually interact with the latter. In fashion history, various epochs of styles are characterized by certain ways to envelope the body. There is, however, one characteristic that all different kinds of pieces of clothing have, over time or of all styles, in common: Their 2D flat pattern and their 3D garment shape are developed for an upright standing body. The men suit is a typical example of piece of clothing that is tailored to a body in an erect position. If a men suit would be developed and fitted to a sweeping dance movement, it would have a completely different, bizarre altered shape, in the erect standing position - seen from our today's point of view. Taking into account the body motion, a central aspect of the human body, thus, constitutes a novel approach for fashion design with a high potential for aesthetical and functional innovations.

The research project Fashioning Movement generated new knowledge about the interrelation between the body and clothing during motion, information we did not possess before, by means of garment simulation methods. To conduct this research, 3 types of sports movements have been chosen as the related industry was in particular interested in this study: alpine ski, cross-country ski and mountain biking. Virtual replicas of real test garments have been created out of their digital 2D patterns and simulated with a state of the art simulation system. Each test garment has been simulated with the animation of a professional athlete. Numerical fitting data, precisely illustrating the extensions, deformations and compressions of each garment, was then recorded for the entire motion sequences in the form of image maps for the 2D pattern and the corresponding 3D garment. The series of image maps have been studied with a new developed garment deformation analysis software. The evaluation of the data was conducted for functional and aesthetical enhancements. The resulting information was discussed with clothing experts with regards to possible modifications and improvements for Fashion Design.