

スポーツウェア素材の伸張回復性と 人の動作拘束性との関連

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Relationship Between Extension Recoverability of Sportswear Materials and Body Motion Restriction

by

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ABSTRACT

Basic mechanical properties and surface properties of sportswear fabrics are measured and those parameters are regressed with subjective values concerning extension recoverability and body motion restriction. Objective evaluation equations for items such as "Stretchy", "Recoverable", "Good handle", "Strong restriction", "Easy to move", are developed from the mechanical parameters.

"Stretchy" sportswear fabrics are highly agreed with "Easy to move" fabrics, and are negatively coincident with "Strong restriction" fabrics in the point of correlation coefficients between subjective evaluation and the coefficients of those objective evaluation equations. These three items have high correlation with EMT-1(maximum elongation in wale direction), and are determined mostly by the value. This result corresponds to the manner of subjective evaluation test, in which panels bend and stretch sportswear fabrics in wale direction with their elbows.

"Recoverable" is decided mainly by maximum elongation in course direction.

要 旨

スポーツウェア素材の伸張，回復に関連すると考えられる基本力学的特性，表面特性を測定し，これらの値と，被験者による主観評価で求めた伸張回復性や動作拘束感とを回帰することにより，“伸びやすい”“回復しやすい”，“肌触りがよい”，“拘束力が強い”，“動かしやすい”の項目について，素材の物性値から客観評価可能な式を開発できた．“伸びやすい”，スポーツウェア素材は“動きやすい”と正の相関が強く，“拘束力が強い”とは負の相関が強い．これらの項目はすべてウェール方向の最大伸び率との相関が強く，この値によって，三項目がほぼ決定される．これは，被験者の評価が肘をウェール方向に曲げ伸ばしたことに対応する．“回復しやすい”については，コース方向の伸び率の効果が大きい．