原著論文

ゴルフスイング時のクラブヘッド速度と法線方向へのグリップ速度との関係について

Relationship between club head velocity and normal direction grip velocity during golf swing

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Abstract

The present study examined whether a golf player increased the club head velocity by pulling the club grip inward (normal direction) during the actual golf swing. The subjects were 18 male university golf players. These subjects were instructed to drive the ball as normal, during which time the three-dimensional coordinates of reflective markers attached to the subjects and their clubs were recorded by a motion capture system (250 Hz). The findings of this study are summarized as follows.

1) Golf players developed normal acceleration from the start of the downswing and at the same time increased normal power by pulling the grip to the normal direction, thus causing the club head to accelerate.
2) Golf players with higher club head velocities pulled the grip to the normal direction more vigorously from the start of downswing.
3) Golf players with higher club head velocities increased the normal acceleration by reducing the radius of curvature from the middle of downswing.
4) Golf players with higher club head velocities accelerated the club head by increasing the radius of curvature prior to ball impact.

キーワード　法線加速度，法線パワー，パラメトリック加速
normal acceleration，normal power，and parametric acceleration

1．緒　言

ゴルフとはクラブでボールを打ち，いかに少ない打数でボールをカップに入れるかを競うスポーツである．そのため，ゴルフにおいてショットの飛距離を高めることは，高スコアを出すために重要な要素の１つと言える．そのことから，多くのゴルフ選手や指導者たちはいつもクラブのヘッド速度を高める方法を探求している．

これまでゴルフのスイング動作のモデリングとして，二重振子モデルが一般的に用いられてきた（Williams, 1969）．しかし，Nesbit

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