

Aerodynamic and flying characteristics of surface structure of golf ball

by

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Abstract

The aerodynamic characteristics of a three-dimensional body, such as sphere, depend on the form and surface structure of the body. It is known that a sphere's drag can be decreased by changing its surface structure. In this study, a golf ball is regarded as the basic form of a three-dimensional body. This study aims at clarifying the mechanism of the drag reduction of the surface structure of a sphere by comparing and examining the results of lift, drag, pressure measurements, and the results of the numerical analysis of the drag reduction achieved by changing the characteristics of hollows, termed dimples, set in the sphere's surface. In the case of the rotating condition, the drag and lift characteristics depend on the stationary characteristics of the sphere.

Keywords: fluid force, sphere, pressure distribution, numerical analysis

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