Optimum Loft Angle for Greatest Carry Distance

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1 Abstract

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2 Response

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3 Theory and model

3.1 Assumptions

The following assumptions are made throughout the report and model:

· golf course is level and has no effect on trajectory;

· height of the tee is negligible;

· gravitational field strength is constant (9.81 $N \cdot kg^{-1}$) and does not flucuate with height;

· driver is roughly a flat plate and strikes the ball precisely at the center, with no draw or fade.

3.2 Impact

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3.3 Flight

A simple golf ball experiencing only weight may be modelled with the following system of differential equations:

$$\frac{\partial v_x}{\partial t} = 0 \tag{1}$$

$$\frac{\partial v_y}{\partial t} = -g \tag{2}$$

where g is the gravitional field strength.