

Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Golf in the Wind: Exploring the Effect of Wind on the Accuracy of Golf Shots NEDA YAGHOBIAN, RAJAT MITTAL, Johns Hopkins University — Golf play is highly dependent on the weather conditions with wind being the most significant factor in the unpredictability of the ball landing position. The direction and strength of the wind alters the aerodynamic forces on a ball in flight, and consequently its speed, distance and direction of travel. The fact that local wind conditions on any particular hole change over times-scales ranging all the way from a few seconds to minutes, hours and days introduces an element of variability in the ball trajectory that is not understood. Any such analysis is complicated by the effect of the local terrestrial and vegetation topology, as well as the inherent complexity of golf-ball aerodynamics. In the current study, we use computational modeling to examine the unpredictability of the shots under different wind conditions over Hole-12 at the Augusta National Golf Club, where the Masters Golf Tournament takes place every year. Despite this being the shortest hole on the course, the presence of complex vegetation canopy around this hole introduces a spatial and temporal variability in wind conditions that evokes uncertainty and even fear among professional golfers. We use our model to examine the effect of wind direction and wind-speed on the accuracy of the golf shots at this hole and use the simulations to determine the key aerodynamic factors that affect the accuracy of the shot.

Rajat Mittal
Johns Hopkins University

Date submitted: 29 Jul 2015

Electronic form version 1.4