

Abstract Submitted  
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**Prediction of the flow around a golf ball using different turbulence models.** CLINTON SMITH, KYLE SQUIRES, Arizona State University — Turbulence models, including Reynolds-Averaged Navier-Stokes (RANS) and Detached Eddy Simulation (DES), are applied to prediction of turbulent flow around a golf ball. Both non-rotating and rotating cases are considered. One of the primary goals of the work is to assess the capability of the turbulence treatments in predicting the flow around the ball. Predictions are presented from computations performed at a Reynolds number based on the diameter of the ball and a freestream velocity of around 160,000. The time history of the drag force for the rotating and non-rotating cases are similar, with the values of the average drag for the rotating case nominally higher for all turbulence treatments used. Predictions of the lift and drag coefficients using RANS and DES are in good agreement with measurements, in spite of the simplifications made to treatment of the boundary layer.

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