Abstract Submitted
for the APR14 Meeting of
The American Physical Society

The Evaluation and Testing of Various Bladeless Wind Turbine Designs for use as an alternative renewable energy source IAN AGNEW, TAYLOR RAY, Georgia College & State Univ, GEORGIA COLLEGE WIND ENERGY RESEARCH TEAM — Over the last two decades wind turbines have proven themselves globally as a reliable, renewable, and clean energy source. Even though wind turbines are simpler in design and do not pollute during operation as compared to conventional energy sources, many improvements can still be made. The design of a bladeless wind turbine offers potential improvements such as cost savings, reduction of operating noise level, simplification of the manufacturing process, reduction of maintenance costs, and incorporation of eco-friendly features. In order to analyze various turbine designs, a wind tunnel with a 30.3cm x 29.1cm test section was constructed at Georgia College. Several different wing sections are being evaluated in order to determine the turbine design and engineered for optimal aerodynamic efficiency over a Range of Reynolds numbers. Other factors like Pressure coefficients and overall drag profile of the designs will also be analyzed as well.

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Date submitted: 09 Dec 2013 Electronic form version 1.4