

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Simulation of the Effects of Cooling Techniques on Turbine Blade Heat Transfer**<sup>1</sup> VINCE SHAW, None, MARCO FATUZZO, Xavier University, Cincinnati, OH — Increases in the performance demands of turbo machinery has stimulated the development many new technologies over the last half century. With applications that spread beyond marine, aviation, and power generation, improvements in gas turbine technologies provide a vast impact. High temperatures within the combustion chamber of the gas turbine engine are known to cause an increase in thermal efficiency and power produced by the engine. However, since operating temperatures of these engines reach above 1000 K within the turbine section, the need for advances in material science and cooling techniques to produce functioning engines under these high thermal and dynamic stresses is crucial. As with all research and development, costs related to the production of prototypes can be reduced through the use of computational simulations. By making use of Ansys Simulation Software, the effects of turbine cooling techniques were analyzed.

<sup>1</sup>Simulation of the Effects of Cooling Techniques on Turbine Blade Heat Transfer

David Morris  
Xavier Univ

Date submitted: 04 Nov 2015

Electronic form version 1.4