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## Study on the penny platform of variable stator vane in compressor

Yang Rongfei<sup>1,2</sup>, Wang Jing Yu<sup>1</sup> and Ge Ning<sup>1</sup> <sup>1</sup>Nanjing University of Aeronautics and Astronautics, China <sup>2</sup>Collaborative Innovation Center of Advanced Aero-Engine, China

Wariable Stator Vane (VSV) is widely used in multistage compressors of gas turbines, which can improve the compressor performance at off-design conditions. The gap between the vane ends and the casing or hub of the compressor should be large enough to ensure the reliable vane rotation, so the effects on the compressor performance cannot be ignored. Due to the plugged part of the gap, location & size of the adopted and the effects of penny platform location on performance of the 2-D cascade are studied through experiment and numerical simulation. The penny platform is processed to match blade profile at one end of each vane. Numerical calculation of the annular cascade with cylindrical penny platform is carried out, in which the penny platforms at opposite ends of the vane are given the different location and size. Results show that the loss of cascade at large attack can reach the minimum level when the penny platform occupies the front half blade and covers the leading edge of the blade. At the same time, the penny platform should be large enough to block up the high load zone of the blade. The end wall loss is greater near the casing than near the hub.

## Biography

Yang Rongfei is a Lecturer at Jiangsu Province Key Laboratory of Aerospace Power Systems, College of Energy and Power Engineering, Nangjing University of Aeronautics and Astronautics. She received her Doctor's degree from Beijing University of Aeronautics and Astronautics in 2011. Her research focuses mainly on unsteady flow phenomena in turbo-machinery including wake, tip leakage flow and their interaction with blade and shock. She also has been doing research in flow control in compressor or turbine such as variable stator vane, blade tip treatment to improve compressor or turbine.

yrf@nuaa.edu.cn

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