www.tjburrows.com

Travis J. Burrows

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Education

Aug 2020 **Ph.D. Mechanical Engineering, Georgia Institute of Technology,** GPA 3.92
Thesis: *Evolution and Control of Coupled Flow Separation and Streamwise Vorticity Concentrations within Offset Diffusers*
Advisor: Dr. Ari Glezer
Minor: Computational Science and Engineering

Dec 2018 **M.S. Mechanical Engineering, Georgia Institute of Technology,** GPA 4.00

May 2014 **B.S. Mechanical Engineering, North Carolina State University,** GPA 3.63

Research Experience

Aug 2014 - Aug 2020 **Graduate Research Assistant**

- Manage and operate a transonic wind tunnel facility, and conduct experiments
- Design flow control devices to modify serpentine diffuser internal flow structure for improvement of aircraft engine performance
- Design components, systems, and software for customized measurement techniques
- Perform data processing, visualization, and analysis
- Present research at conferences and produce conference and journal papers

Technical Skills

Software LabView, Siemens NX, MATLAB, Linux

Programming C, C++, Python, MPI, GPU, OpenMP, Pandas, Javascript

Laboratory Particle image velocimetry, pressure-sensitive paint, experimental flow visualization, measurement and signal processing, experimental design, laser and camera optics

Interests Thermo-fluidic sciences, data science, computational fluid dynamics, numerical methods, high performance computing

Journal Publications

Feb 2019 **Control of flow distortion in offset diffusers using trapped vorticity**
Travis J. Burrows, Bojan Vukasinovic, Matthew T. Lakebrink, Mortaza Mani, and Ari Glezer
International Journal of Heat and Fluid Flow, Volume 75, 2019

Conference Publications

Jun 2020 **Controlled Flow Dynamics in a Serpentine Diffuser with a Cowl Inlet**
Travis J. Burrows, Bojan Vukasinovic, Ari Glezer, Matthew T. Lakebrink, and Mortaza Mani
AIAA Aviation 2020 Forum

Jun 2019 **Control of a Transonic Shock in a Serpentine Diffuser using Surface Fluidic Actuation**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
AIAA Aviation 2019 Forum

Jun 2018 **Flow Dynamics Effected by Active Flow Control in an Offset Diffuser**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
2018 Flow Control Conference, AIAA AVIATION Forum

Jun 2017 **Fluidic Control of an Aggressive Offset Diffuser for a Supersonic Inlet**
Travis J. Burrows, Bojan Vukasinovic, and Ari Glezer
47th AIAA Fluid Dynamics Conference, AIAA AVIATION Forum

Jan 2017 **Experimental and Numerical Investigation of Controlled Flow Distortion in a Subsonic Offset Diffuser by Trapped Vorticity**
Bojan Vukasinovic, Travis J. Burrows, Ari Glezer, Matthew T. Lakebrink, and Mortaza Mani.
55th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum

Jan 2016 **Investigation of Trapped Vorticity Concentrations Effected by Hybrid Actuation in an Offset Diffuser**
Travis J. Burrows, Zicheng Gong, Bojan Vukasinovic, and Ari Glezer
54th AIAA Aerospace Sciences Meeting, AIAA SciTech Forum

Work Experience

Jan 2012 - Dec 2013 **Development and Manufacturing Engineering Co-ops, Robert Bosch, LLC.**
- Stress-tested prototype components, analyzed results, and presented findings
- Statistically analyzed production line to determine process and machine capability