



Numerical Simulation of the Rta Combustion Rig

By Farhad Davoudzadeh

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 26 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. The Revolutionary Turbine Accelerator (RTA) Turbine Based Combined Cycle (TBCC) project is investigating turbine-based propulsion systems for access to space. NASA Glenn Research Center and GE Aircraft Engines (GEAE) planned to develop a ground demonstrator engine for validation testing. The demonstrator (RTA-1) is a variable cycle, turbofan ramjet designed to transition from an augmented turbofan to a ramjet that produces the thrust required to accelerate the vehicle from Sea Level Static (SLS) to Mach 4. The RTA-1 is designed to accommodate a large variation in bypass ratios from sea level static to Mach 4 conditions. Key components of this engine are new, such as a nickel alloy fan, advanced trapped vortex combustor, a Variable Area Bypass Injector (VABI), radial flameholders, and multiple fueling zones. A means to mitigate risks to the RTA development program was the use of extensive component rig tests and computational fluid dynamics (CFD) analysis. This item ships from La Vergne, TN. Paperback.



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