



User's Manual for Rocket Combustor Interactive Design (Roccid) and Analysis Computer Program. Volume 1: User's Manual (Paperback)

By National Aeronautics and Space Adm Nasa

Independently Published, United States, 2018. Paperback. Condition: New. Language: English. Brand new Book. The user's manual for the rocket combustor interactive design (ROCCID) computer program is presented. The program, written in Fortran 77, provides a standardized methodology using state of the art codes and procedures for the analysis of a liquid rocket engine combustor's steady state combustion performance and combustion stability. The ROCCID is currently capable of analyzing mixed element injector patterns containing impinging like doublet or unlike triplet, showerhead, shear coaxial, and swirl coaxial elements as long as only one element type exists in each injector core, baffle, or barrier zone. Real propellant properties of oxygen, hydrogen, methane, propane, and RP-1 are included in ROCCID. The properties of other propellants can easily be added. The analysis model in ROCCID can account for the influence of acoustic cavities, helmholtz resonators, and radial thrust chamber baffles on combustion stability. ROCCID also contains the logic to interactively create a combustor design which meets input performance and stability goals. A preliminary design results from the application of historical correlations to the input design requirements. The steady state performance and combustion stability of this design is evaluated using the analysis models, and ROCCID guides...



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