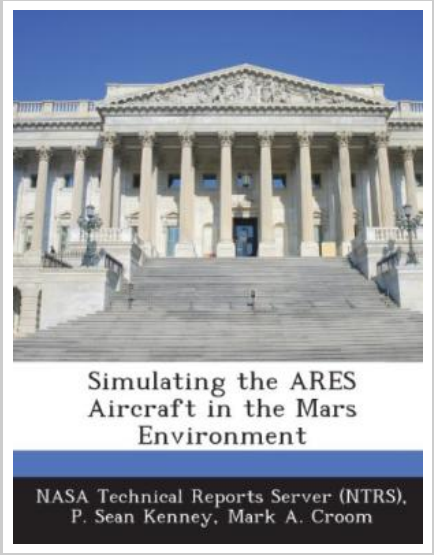

Simulating the Ares Aircraft in the Mars Environment

By P. Sean Kenney

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 24 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.NASA Langley proposed the Aerial Regional-scale Environmental Survey (ARES) of Mars science mission in response to the NASA Office of Space Science 2002 Mars Scout Opportunity. The science-driven mission proposal began with trade studies and determined that a rocket powered aircraft was the best suited platform to complete the ARES science objectives. A high fidelity six degree of freedom flight simulation was required to provide credible evidence that the aircraft design fulfilled mission objectives and to support the aircraft design process by providing performance evaluations. The aircraft was initially modeled using the aero, propulsion, and flight control system components of other aircraft models. As the proposed aircraft design evolved, the borrowed components were replaced with new models. This allowed performance evaluations to be performed as the design was maturing. Basic autopilot features were also developed for the ARES aircraft model. Altitude hold and track hold modes allowed different mission scenarios to be evaluated for both science merit and aircraft performance. Platform stability and data rate requirements were identified for each of the instruments and the aircraft performance was evaluated against those...

Reviews

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