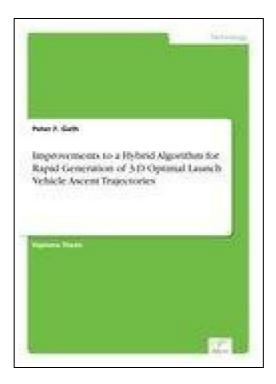
Improvements to a Hybrid Algorithm for Rapid Generation of 3-D Optimal Launch Vehicle Ascent Trajectories



Filesize: 6.04 MB

Reviews

A top quality ebook and the font employed was exciting to read. Of course, it can be enjoy, nonetheless an interesting and amazing literature. Your life span will likely be transform once you full reading this book. (Phyllis Welch)

IMPROVEMENTS TO A HYBRID ALGORITHM FOR RAPID GENERATION OF 3-D OPTIMAL LAUNCH VEHICLE ASCENT TRAJECTORIES

CO DOWNLOAD PDF

Diplom.De Dez 1999, 1999. Taschenbuch. Book Condition: Neu. 210x148x7 mm. This item is printed on demand - Print on Demand Titel. Neuware -Diploma Thesis from the year 1998 in the subject Engineering - Aerospace Technology, grade: 1,0, University of Stuttgart (Luft- und Raumfahrttechnik, Flugmechanik und Flugregelung), language: English, abstract: Inhaltsangabe:Abstract: This thesis presents improvements to FLOAT, a hybrid analytical/numerical algorithm for rapid generation of three dimensional, optimal launch vehicle ascent trajectories. Improvements have been made to the terminal constraints, which are now available in a more general form to allow for an optimal attachment point to the target orbit. The existing algorithm also has been extended with logic that allows for vehicles with low thrust to weight ratios in the upper stage and successful convergence of problems with path constraints for normal force and angle of attack Another major extension made to the code is the introduction of coasting arcs. Coasting arcs are implemented using a completely analytical solution for the prediction of states and costates as well as for the required sensitivity matrix. This allows for a very fast and accurate calculation even with long coasting arcs. Finally, an approach for the optimization of start and end time of coast arcs is presented. This approach was implemented and the results of a test case compare very well with results generated with OTIS for the same case. At the end, suggestions for future development are made. Inhaltsverzeichnis: Table of Contents: Summaryi Acknowledgementsii Contentsiii Nomenclaturev Figuresviii Introduction1 1.Problem description3 1.1Describing the final orbit3 1.2Coordinate frame5 1.3Dynamic system6 1.4Initial conditions7 1.5Path constraints7 1.6Performance index7 1.7Terminal constraints8 1.8Solution method8 1.9Non-dimensionalization of the variables9 2.Solving the two-point boundary value problem10 2.1Vacuum solution10 2.1.1Simplified model equations10 2.1.2Optimal control for vacuum solution11 2.1.3Thrust integrals and closed form solution for ascent in vacuum12 2.2Atmospheric solution13 2.2.1Dynamic system and collocation variables13...

Read Improvements to a Hybrid Algorithm for Rapid Generation of 3-D Optimal Launch Vehicle Ascent Trajectories Online

Download PDF Improvements to a Hybrid Algorithm for Rapid Generation of 3-D Optimal Launch Vehicle Ascent Trajectories

Other Books

PDF	J

Phonics Fun Stick Kids Workbook, Grade 1 Stick Kids Workbooks

Creative Teaching Press. Paperback. Book Condition: New. Paperback. 56 pages. Dimensions: 8.8in. x 6.4in. x 0.3in.Learning to read is a fun and exciting time in a childs life, and being able to decode words is... Read Document »

P	DF

How to Make a Free Website for Kids

Createspace, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****. Table of Contents Preface Chapter # 1: Benefits of Having a Website Chapter... Read Document »

PDF

The About com Guide to Baby Care A Complete Resource for Your Babys Health Development and Happiness by Robin Elise Weiss 2007 Paperback Book Condition: Brand New. Book Condition: Brand New.

Read Document »

PDF

Weebies Family Halloween Night English Language: English Language British Full Colour Createspace, United States, 2014. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****. Children s Weebies Family Halloween Night Book 20 starts to teach Pre-School and... Read Document »

PDF
\square

A Little Wisdom for Growing Up: From Father to Son

Wipf Stock Publishers, United States, 2007. Paperback. Book Condition: New. 193 x 119 mm. Language: English . Brand New Book ***** Print on Demand *****. Description: A Little Wisdom for Growing Up is an ancient form...

Read Document »