

Meshing, Visualization, and Computational Environments

Papers Presented at the AIAA Aviation Forum 2023

San Diego, California, USA
12-16 June 2023

ISBN: 978-1-7138-7877-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 34922 Uwytkug'Xcmg{'Ftkxg.'Uwky'422, Reston, VA 20191, USA.

TABLE OF CONTENTS

GEOMETRY, MESHING, AND COMPUTATIONAL ENVIRONMENTS

On Managing Geometric Models for Multi-Component, Multi-Disciplinary Analysis and Design.....	1
<i>John Dannenhoffer, Nitin D. Bhagat</i>	
CAPS and M4 Structures Studio Interfacing and Integration.....	24
<i>Thomas Nascenzi, Timothy Cuatt, Shaadi Sabeti, Tyler F. Winter, Ryan J. Durscher, Joshua D. Deaton</i>	
Free-Form Deformation of Parametric CAD Geometry Via B-Spline Transformations	40
<i>Marlena Gomez, Marshall C. Galbraith, Robert Haines</i>	
Aerodynamic Simulations for Complex Geometries Using Automatically Generated Structured Overset Meshes	57
<i>Andrew M. Chuen, Seyedeh Sheida Hosseini, James C. Jensen, William M. Chan</i>	

GENERAL TOPICS IN AVIATION I VIRTUAL SESSION

Improvement of Cache Utilization in a Parallel CFD Code Through Mesh Reordering by Hilbert Curves.....	93
<i>George P. Silva, Jesuino T. Tomita, Cleverson Bringhamti</i>	
Discretization Error Guided Optimal Mesh Adaptation in One-Dimensional Steady Problems	101
<i>Eduardo de Oliveira Carvalho, Rodrigo Costa Moura, Andre Fernando de Castro da Silva</i>	
Momentum Thrust Enhancement of Liquid Rockets at Vacuum by Spraying High Heat Capacity Nano-Granules to the Subsonic Region of the Rocket Nozzle	117
<i>Srivatsav Sanjay Sridhar, Yash Raj, VR Sanal Kumar</i>	

Author Index