Dedicated to Professor Max Gunzburger on the occasion of his 60th birthday

"What we do is develop, implement, analyze, test, and apply new algorithms that can be used to better solve problems, thus enabling advances in science and engineering."

-Max Gunzburger

FOREWORD

This peer-reviewed special issue is dedicated to Professor Max D. Gunzburger in celebration of his sixtieth birthday and his distinguished career achievements.

Professor Gunzburger is a preeminent computational and applied mathematician of our times with numerous groundbreaking and seminal works. He is a pioneer, leading researcher and instigator of several important research directions that include: theory and applications of centroidal Voronoi tessellations, analysis and computational methods for the control of fluids, mathematical modeling and numerical studies of superconductivity, and finite element least squares methods, among many others.

Professor Gunzburger's research accomplishments are incredibly broad in both subjects and research methodologies. The topics of his research span a wide spectrum of scientific areas including fluid mechanics, superconductivity, elasticity and
structures, and material science, just to name a few. His research aspects involve modeling, hard and soft analysis, the design of ingenious, efficient and effective computational schemes, rigorous numerical analysis and error estimations, or whatever the problem at hand calls for. The attached list of Professor Gunzburger’s publications speaks vividly of his distinguished research career.

Professor Gunzburger has been an enthusiastic promoter and practitioner of global computational mathematics, training and collaborating with students and researchers of different nationalities and of diverse cultural or educational backgrounds. He has constantly and unselfishly contributed to the global dissemination of research in computational and applied mathematics, and his outstanding research leadership and tireless service has positively impacted the worldwide prospering of research in these areas.

The contributing authors of this special issue consist mostly of Professor Gunzburger’s former Ph.D students, postdoctoral fellows, and colleagues who at one time or another had the opportunity to collaborate with Professor Gunzburger on various research projects. This collection of research papers is an epitome testimony of Professor Gunzburger’s wide scope of research accomplishment and profound influence in the international research community on numerical analysis and on scientific and engineering modeling.

No doubt that great thoughts and ideas will continue to stream out of Professor Gunzburger’s beautiful mind, bringing his already distinguished career to an even higher plateau.

I would like to thank Professor Yanping Lin, the Editor-in-Chief of this journal, for his support and painstaking effort in the publication of this special issue. I also would like to thank all contributing authors and referees for their contributions and assistance.

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PUBLICATIONS OF MAX GUNZBURGER

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Reduced-order models of large-scale computational systems, *SIAM News*, **38/5** 2005, 11; with K. Willcox.


Dedicated to Professor P. Neittaanmäki on His 60th Birthday. Editors: Repin, Sergey, Tiihonen, Timo, Tuovinen, Tero (Eds.) Free Preview. Presents applications in from nanotechnology to cosmology. Both the conference and this volume are dedicated to Professor Pekka Neittaanmäki on the occasion of his sixtieth birthday. It consists of five parts that are closely related to his scientific activities and interests: Numerical Methods for Nonlinear Problems; Reliable Methods for Computer Simulation; Analysis of Noised and Uncertain Data; Optimization Methods; Mathematical Models Generated by Modern Technological Problems. The book also includes a short biography of Professor Neittaanmäki. Show all. Table of contents (24 chapters). Table of contents (24 chapters). This work, which is an extension of a talk given at the 17th Conference on Operator Theory at Timisoara in June 98, illustrates the use of some groupoid techniques in the study of Cuntz-Krieger algebras. It only covers a limited part of the rich domain of the Cuntz-Krieger algebras and their generalizations. The homomorphism \( c : G(X, T) \to \mathbb{Z} \) is strongly surjective in the sense given there on \( \mathbb{Z} \). On the other hand, the reduction of \( G(X, T) \) to \( Y \) is a proper principal groupoid having as quotient space the complement \( \overline{U} \) of the domain \( U \). (ii) This is a well-known property of the \( C\alpha -\) algebra of an amenable groupoid (see e.g. [2]; 6.1.5). Gunzburger began his career at New York University as a research scientist and assistant professor of mathematics, a position he held from receiving his Ph.D. until 1971. He then spent two years working as a post-doctorate at the Naval Ordnance Laboratory before transferring to the Institute for Computer Applications in Science and Engineering at NASA until 1976. He then became an associate professor and professor of mathematics at the University of Tennessee, a position he held from 1976 to 1982[4].

\(^a\) Dedicated to Professor Max Gunzburger on the occasion of his 60th birthday, Forward: International Journal of Numerical Analysis & Modeling, Volume 4, Number 3-4 (PDF). Retrieved 2009-04-06. ^ a b c d e f "Max Gunzburger CV" (PDF).