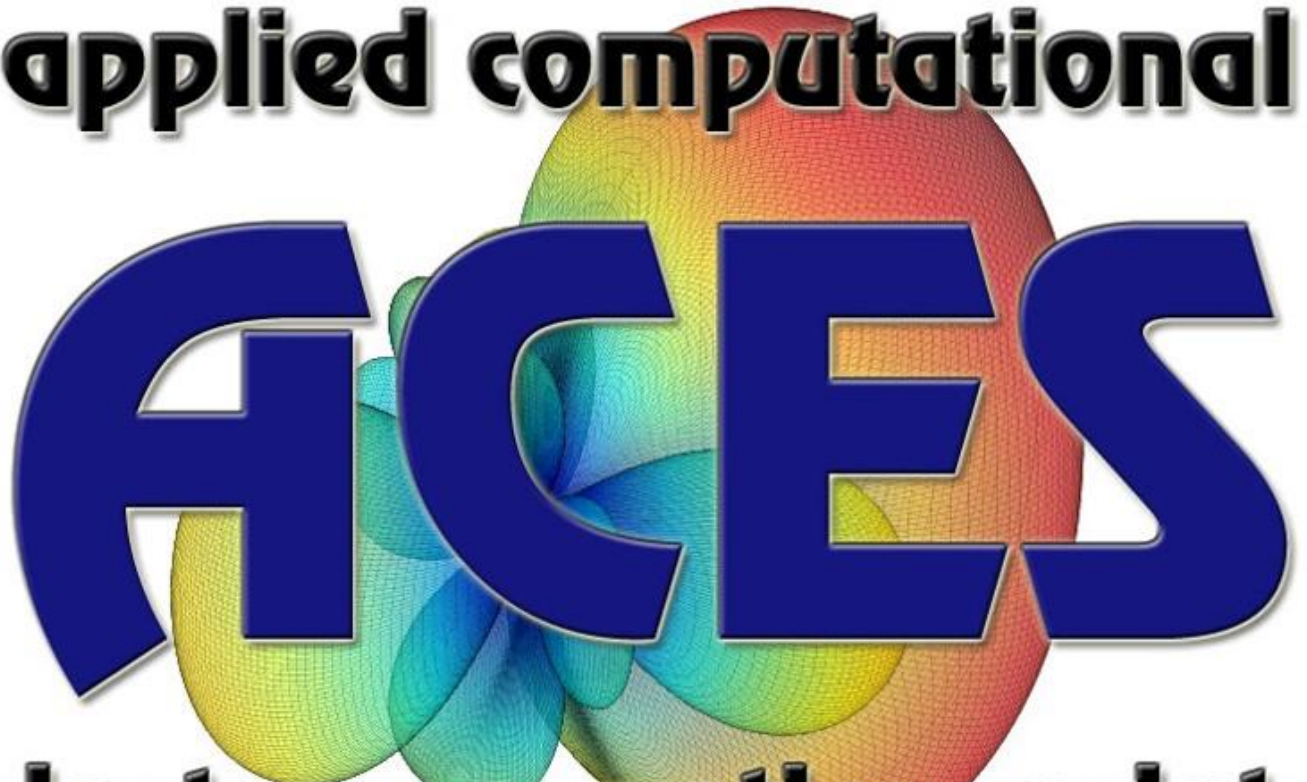


applied computational



ACES

electromagnetics society

Newsletter

December 2020

Applied Computational Electromagnetic Society (ACES)

President's Message



Dear ACES Members and Friends,

On behalf of the Applied Computational Electromagnetics Society, I would like to welcome you to a December 2020 edition of our ACES Newsletter!

We are finishing the 2020 with full steam of activities in the Society. This year, almost behind us, has been extremely challenging to all of us, perhaps like no year in recent memory. While working (and living) mostly remotely or in various “hybrid modes” for the most of the year, we have kept our activities going, and thriving wherever possible, with plenty of accomplishments in all aspects of ACES mission and goals. We stayed strong, with great outlook for the next period, in enhancing and promoting research, development, education, training, and outreach in applied computational electromagnetics.

We keep focusing on our two main signatures, ACES International Conferences and ACES Journal, and are intensely working on making our 2021 conferences as technically productive and socially enjoyable as possible. We are also working hard on introducing some new modalities in the management and production of our Journal, to make it even more efficient and impactful.

We are currently running three nomination processes – for ACES Board of Directors election, ACES Awards, and ACES Fellows selection. Getting excellent nominees for BoD Members, Award Winners, and Fellows is crucial for the Society. Please look for the corresponding email calls for nominations for these three important processes. There is still some time left, so please consider nominating a colleague or facilitating your own candidacy, and act quickly.

I hope that 2021 will be a great year for ACES and look forward to seeing many of you at our conferences and meetings. I can't wait to see you in person as soon as possible.

I wish you and yours a very Happy and Enjoyable Holiday Season and a Prosperous, Safe, and Healthy New Year!

Branislav M. Notaros
President, ACES
Professor, Colorado State University
Fort Collins, Colorado, USA

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Become ACES Member

ACES membership offers many advantages that include discounted ACES Journal and conference registration fees.

Member:

Basic: \$40/year
Student/Retired: \$25/year
Life: \$400

Institutional Member:

Basic (US): \$360/year
Basic (Intl): \$540/year
Expanded (US): \$535/year
Expanded (Intl): \$715/year

Become ACES member by signing up [here](#).

Join ACES Group on
LinkedIn



[ACES 2021 Conferences](#)

Due to the current situation related to the COVID-19 pandemic no certain dates for the ACES 2021 conferences can be given at the time of this newsletter release. The information about the conference dates and their format (100% physical, hybrid or 100% remote) will be posted on the ACES official website as soon as they are available.

We are all looking forward to the possibility of meeting each other in person!

[ACES Journal](#)

Latest issues

The ACES Journal is devoted to the exchange of information in computational electromagnetics, to the advancement of the state of the art, and to the promotion of related technical activities. The ACES Journal welcomes original, previously unpublished papers, relating to applied computational electromagnetics. All papers are refereed. Access all issues of ACES Journal [online](#).

[Direct link to the ACES Journal August 2020 issue](#)

[Direct link to the ACES Journal September 2020 issue](#)

[Direct link to the ACES Journal October 2020 issue](#)

We wish to remind all of you that all ACES Journal Issues can be downloaded from the website at no charges.

[Book Presentation](#)

O. Ezgürl, “New Trends in Computational Electromagnetics”



New Trends in
Computational
Electromagnetics

Edited by
Özgür Ergül



Computational electromagnetics is an active research area concerned with the development and implementation of numerical methods and techniques for rigorous solutions to physical problems across the entire spectrum of electromagnetic waves - from radio frequencies to gamma rays. Numerical methods and techniques developed and implemented in this area are now used every day to solve complex problems in diverse application areas, including but not limited to antennas, telecommunications, biomedical imaging, sensing, energy harvesting, nanotechnology, and optics. The purpose of this book is to provide a broad overview of the recent efforts in computational electromagnetics to develop and implement more robust, stable, accurate, and efficient algorithms.

After an extensive overview of the main trends in computational electromagnetics, individual chapters written by international experts explore the state-of-the-art in frequency-domain surface integration; frequency-domain volume integral equations; time-domain integral equations; time-domain methods for plasmonic media; finite element methods; geometric modelling and discretization for integral equations; hierarchical vector basis functions; analysis of electromagnetic fields in multilayered media; acceleration and parallelization techniques; periodic problems and determining related eigenvalues; algebraic preconditioning; high-frequency techniques and hybridizations; and uncertainty quantification for large-scale electromagnetic analysis.

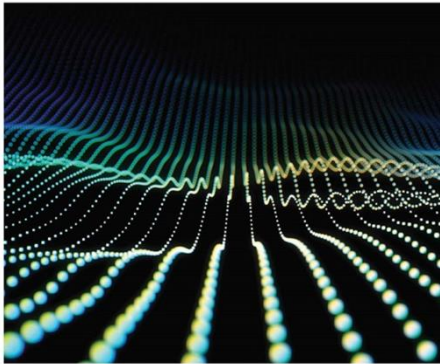
K. F. Warnick, “Numerical Methods for Engineering”



Numerical Methods for Engineering

An introduction using MATLAB® and computational electromagnetics examples
2nd edition

Karl F. Warnick



The revised and updated second edition of this textbook teaches students to create modeling codes used to analyze, design, and optimize structures and systems used in wireless communications, microwave circuits, and other applications of electromagnetic fields and waves. Worked code examples are provided for key algorithms using the MATLAB technical computing language.

The book begins by introducing the field of numerical analysis and providing an overview of the fundamentals of electromagnetic field theory. Further chapters cover basic numerical tasks, finite difference methods, numerical integration, integral equations and the method of moments, solving linear systems, the finite element method, optimization methods, and inverse problems.

Developing and using numerical methods helps students to learn the theory of wave propagation in a concrete, visual, and hands-on way. This book fills the missing space of current textbooks that either lack depth on key topics or treat the topic at a level that is too advanced for undergraduates or first-year graduate students.

Presenting the topic with clear explanations, relevant examples, and problem sets that move from simple algorithms to complex codes with real-world capabilities, this book helps its readers develop the skills required for taking a mathematical prescription for a numerical method and translating it into a working, validated software code, providing a valuable resource for understanding the finite difference method, the method of moments, the finite element method, and other tools used in the RF and wireless industry.

B. Notaros, “Higher Order Methods in Computational Electromagnetics”

To be issued in 2021!

ACES is looking forward to your contributions to the ACES Journal as well as your participation in future ACES Conferences. We look forward to your feedback and involvement in ACES activities.

Sincerely,

Sami Barmada

Editor - ACES Newsletter