



CEFC 2022

DENVER, COLORADO,
USA
October 24–26, 2022



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Welcome to CEFC 2022

The 2022 20th Biennial IEEE Conference on Electromagnetic Field Computation (CEFC) will be held in [Denver, CO, USA, October 24 – 26, 2022](#).

IEEE CEFC is one of the most important scientific and technical events in computational electromagnetics and related fields. The aim of IEEE CEFC is to present the latest developments in modeling and simulation methodologies for the analysis of electromagnetic fields and wave interactions. Application emphasis is on computer-aided design of low and high frequency devices, components, and systems. Scientists and engineers worldwide are invited to submit original contributions in areas related to Static and Quasi-static Fields, Wave Propagation, Material Modeling, Coupled Problems, Numerical Techniques, Optimization and Design, Software Methodology, Nanomagnetism, Nanophotonics, Bioelectric Field Computation as well as Devices, Applications, and education.

The conference will feature oral and poster presentations. Please refer to “Authors & Reviewers” on the menu above for information about creating the pdf for your submission.

Accepted 2-page Digests will be published as part of the conference records in IEEE Xplore Digital Library. Authors are also invited to submit an extended 4-page version for peer review. Selected papers will be published either on IEEE Transactions on Magnetics or included in IEEE Xplore Digital Library as conference proceedings, based on reviews. No additional fee is requested in either case. Full papers will need to be submitted at IEEE Manuscript Central site as authors of accepted Digests will be directed.

Venue

The conference will be held in the mile high city of Denver. With 300 days of sunshine, a walkable downtown, thriving arts and culture, an award-winning culinary scene, and the Rocky Mountains as a backdrop, Denver offers an affordable mix of urban sophistication and outdoor adventure.

Important Dates:

Two-page Digest Due: [May 15, 2022](#)

Notification of Acceptance: [June 30, 2022](#)

Early Registration Due: [July 24, 2022](#)

Final (Extended) Paper Due: [October 26, 2022](#) for IEEE Transactions on Magnetics Review

Local organizing committee
Ian MacMillan (Chair)
Jim Sipes
Alisha Humphries

Topics List:

Papers are solicited in the following topics.

1. Static and Quasi-static Fields:

Electrostatics, Magnetostatics, Eddy Currents, Numerical Methods, Others.

2. Wave Propagation:

Scattering, Radiation, Time and Frequency Domain, Microwaves, Antennas, Numerical Methods, Radiative Transfer, Electromagnetic Compatibility, Others.

3. Material Modeling:

Superconducting Materials, Composite Materials, Hysteresis and Anisotropy, Permanent Magnets, Magnetostrictive or Piezoelectric Materials, Microwave Absorbing Materials, Others.

4. Coupled Problems: (Electromagnetic Field Problems Coupled to ...):

Mechanical Problems, Electric Circuits, Thermal Problems, Others.

5. Numerical Techniques:

Mesh Generation and Adaptive Meshing, Solving Linear Systems, Preconditioning, Eigenvalue Problems, Nonlinear Problems, Near Field Modeling, Parallel and Distributed Computing, GPU, Matrix Compression Technique, Model Order Reduction, Multiscale Modeling, Others.

6. Optimization and Design:

Robust Optimization under Uncertainty, Stochastic and Hybrid Techniques, Multi-Objective and Multi-Level Optimization, Artificial Intelligence and Expert Systems, Inverse Problems, Others.

7. Software Methodology:

Software Design, Software Engineering and Software Quality, Computer Graphics and Data Representation, Human-Machine Interface, Others.

8. Nanomagnetics:

Spintronics, MEMS/NEMS, Nanomagnetics Modeling, Others.

9. Nanophotonics:

Adaptive Optics, Optical Detectors, Electro-Optics, Others.

10. Bioelectromagnetic Fields Computation:

Numerical Approximation, Large Scale Computing, Geometric Modeling and Scientific Visualization (Human Body), Integrated Software Environments, Others.

11. Devices and Applications:

Electric Machines and Drives, Nondestructive Testing, Induction Heating, Power Electronics Devices, Wave Guides, Microwaves Resonators, Micro/Nano-systems, Biomedical Applications, Charged Particles Trajectories, Accelerators, Electromagnetic Launchers, Fusion Machines, Electromagnetic Compatibility, Others.

12. Education.