

CALL FOR PAPERS

Computing in Science & Engineering Magazine



Special Issue on

Computing in Climate: Challenges and Opportunities

Scope

Global climate change is the defining issue of our time and addressing the threat of climate change has become a societal priority. Computing and data science play central roles for understanding the Earth System, and hence, facing the threat of climate change. Furthermore, global climate models (GCMs) pose new challenges for advanced supercomputers and software engineering. In addition, climate big data (e.g., GCM output, reanalysis data, and measurements from Earth-orbiting satellites or in-situ sensors) demand novel data analysis methods that are robust in face of spatio-temporal and geo-physical semantics, heterogeneity, non-stationarity, noise, and data gaps.

Topics

The technical topics of interest and applications include (but are not limited to):

Climate concepts for Computer & Data Scientists: Scientific methods and datasets in climate; regional & global climate models (RCMs & GCMs); climate projections; statistical downscaling; data assimilation; uncertainty quantification; extreme events; climate sensitivity and feedback; paleoclimate data and applications; nexus of climate, water, food, energy, and health.

Computer & Data Science concepts, opportunities & advances for climate: Advanced computing architectures for GCMs; Spatial, temporal, & spatio-temporal statistics, machine learning & data mining; Physics-aware and physics-constrained data analytics; Uncertainty visualization and communication; High-performance tools and methods; Software engineering for climate modeling; Other computing advances and applications for Climate.

Format

The Computing in Science & Engineering (CiSE) magazine aims at providing in each issue an extraordinarily written collection of works in the form of tutorials and overview papers presenting scientific and computational contributions in a clear and accessible format. Thus, technically too deep or too shallow papers are discouraged. This issue will contain 4 to 6 articles (7000 words counting 250 words per figure/table) and another 4 to 6 short (2500 words counting 250 words per figure/table) papers. All submissions will be reviewed using the CiSE magazine guidelines. A whitepaper or manuscript may be submitted at <https://mc.manuscriptcentral.com/cs-ieee> using the Manuscript central and should not have been published or be under review elsewhere. Author guidelines are at www.computer.org/web/peer-review/magazines at the CiSE magazine homepage (www.computer.org/web/computingnow/cise) along with a 2015 digital edition (free download).

Schedule

March 31st, 2015: Submit a whitepaper (2500 words, IEEE double column)

April 15th, 2015: Notification of acceptance, invitation

May 30th, 2015: Manuscript due (7000 words, IEEE double column)

June 15st, 2015: Reviews

June 30th, 2015: Final manuscript due

Nov.-Dec. 2015: Expected publication date

Guest editors

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