

Special Issue

Advanced Statistical Techniques in Oceans and Climate Research

Message from the Guest Editors

The Earth's climate and oceans are complex, multidimensional, multiscale stochastic processes in which different physical processes interact on different temporal and spatial scales. Statisticians are working to extract meaningful information from huge amounts of Earth observational and simulation data using various statistical techniques (e.g., EOF, DEA, EVA, CCA, SSA, PCA, MCMC, DFA, IPTA, Bayesian decisions, downscaling analyses, data assimilation, wavelet/framelet, spectral analyses, information entropy, and stochastic networks). At present, ensemble statistical learning techniques are being developed to deal with the emerging big Earth datasets, which cannot be analyzed deeply using classic statistical techniques due to the size, variety, and dynamic nature of big data. In this Special Issue, we aim to collect recent results on developing and applying advanced statistical techniques to reveal trends and patterns of climate/ocean evolution, determine the statistical correlation between climate/ocean systems and ecosystems, and evaluate the uncertainty of climate/ocean models, as well as estimate anthropogenic carbon emissions and land/marine carbon sinks.

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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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