

Special Issue

Mathematical Models in Sociology: Dynamics, Networks, and Decision Processes

Message from the Guest Editor

This Special Issue invites mathematically rigorous contributions at the interface of sociology, with a focus on dynamic processes, network structure, and decision behavior. Contemporary social-behavioral systems exhibit nonlinear feedback, heterogeneity, and stochasticity; therefore, formal modeling is essential for explanation, prediction, and intervention design. We welcome work on opinion and belief dynamics, social influence and contagion, polarization mechanisms, cognitive and collective decision processes, game-theoretic interaction, and agent-based approaches that connect micro-level rules to macro-level outcomes. Appropriate methods include differential and difference equations, stochastic processes, control and optimization, inverse problems, inference under uncertainty, and temporal or multilayer network analysis. Empirical grounding through calibration, validation, and reproducible computational workflows is strongly encouraged. This Special Issue aims to consolidate advances in mathematical sociology while promoting cross-disciplinary methods with both theoretical depth and practical relevance for complex social systems.

Guest Editor

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About the Journal

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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