Special Issue

Mathematical Population Dynamics and Epidemiology

Message from the Guest Editors

Emerging or re-emerged infectious diseases pose a grave threat to human health and societal development, such as SARS, H1N1, H7N9 and Middle East Respiratory Syndrome coronavirus. Typically, a new coronavirus pneumonia, named COVID-19, has spread menacingly quickly since December 2019, infecting more than 200 countries. Consequently, it is necessary to study the transmission dynamics of infectious diseases in order to prevent and control such major or emerging infectious diseases. It is well known that diseases spread in terms of both time and space, and spatial diseases are formed as various pattern structures which can reflect the evolution law of diseases well. In this sense, it is of great practical significance to study the formation mechanisms and functions of disease patterns. It is worth noting that diseases spread through populations as carriers and the outbreak or extinction of diseases mainly depends on the population mechanism of demographics and/or human behaviors. In other words, when studying the spread of infectious diseases, it is necessary to comprehensively consider the population dynamics.

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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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