Special Issue

Soliton Theory and Integrable Systems in Mathematical Physics

Message from the Guest Editor

The theory of integrable systems encompasses algebraic, geometric, and analytic approaches. In addition, numerical simulation techniques have become useful tools to understand the soliton phenomena since the stability and collision of solitary waves deserve careful examinations. In this Special Topic, we seek to focus on the various distinct formal definitions of integrability, such as a Lax integrable model, a Painlevé integrable model, an inverse scattering transform (IST) integrable model, a consistent Riccati expansion (CRE) integrable model, and a symmetry integrable system defined as possessing many infinite symmetries. Moreover, the quasi-integrable modifications deserve to be examined in the context of the recursion operators, generalized local and non-local symmetries, anomalous zero-curvature, and Riccati-type pseudopotential approaches. We also invite papers that employ numerical techniques in order to simulate the soliton phenomena, such as pseudo-spectral, time-splitting, relaxation, and other methods.

Guest Editor

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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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