Applied Mathematics for High Energy Physics and Particle Physics

Guest Editors:

Prof. Joao Pacheco B.C. de Melo

Laboratório de Física Teórica e Computacional (LFTC), Universidade Cruzeiro do Sul/Universidade Cidade de São Paulo, Rua Galvão Bueno 868, São Paulo 01506-000, Brazil

Dr. Pedro Henrique Ribeiro da Silva Moraes

Laboratório de Física Teórica e Computacional (LFTC), Universidade Cruzeiro do Sul/Universidade Cidade de São Paulo, Rua Galvão Bueno 868, São Paulo 01506-000, Brazil

Dr. Ana Julia Silveira Mizher Silveira Mizher

Laboratório de Física Teórica e Computacional (LFTC), Universidade Cruzeiro do Sul/Universidade Cidade de São Paulo, Rua Galvão Bueno 868, São Paulo 01506-000, Brazil

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Message from the Guest Editors

Dear Colleagues,

Physics in the last 50 years has been profoundly influenced by high energy and elementary particle physics. The subject of applied mathematics in physics and its relation to physics has a long history. However, the full development of applied mathematics requires a large number of specialized techniques, in particular the advanced mathematical methods of algebra, real and complex analysis, differential geometry, differential operators, and partial differential equations.

This Special Issue is planned to focus on particle physics and high energy, with an emphasis on the use of modern methods of applied mathematics, which includes differential equations, integral equations, matrix algebra, variational calculus, scattering theory, Dirac algebra, conformal algebras, group theory, Fourier series, computational algorithms, and the integral equations to solve the Yang–Mills fields, with applications to the computation of diagrams in QCD, as well as the Dirac equation and the existence of its solution, with applications to particle scattering.

Special Issue

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

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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