Special Issue

Upgrades in High Energy Physics Experiments

Message from the Guest Editors

The most recent discoveries in high energy physics (HEP), both in the Higgs and in the flavor sector, which reached unprecedented precision, led to a solid confirmation of the standard model (SM) of the particle physics. To broaden our horizons and explore regions where physics beyond the SM could be hidden, all major (HEP) experiments are studying and realizing substantial upgrades to increase their performance and sensitivities. If this technological effort provides new and sophisticated apparatuses, the huge amount of data that will be produced requires the development of complex and elaborate analysis techniques. This Special Issue collected papers describing several examples of the extensive upgrade program on some of the largest experiments in high energy physics with a particular focus on their expected performance and the benefits for scientific research.

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Deadline for manuscript submissions

closed (30 September 2022)

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/66925

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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