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General Relativity: From Differential Geometry to Gravitational Waves

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Deadline for manuscript submissions:
closed (31 December 2024)

Message from the Guest Editor

Dear Colleagues,

General Relativity, as introduced by Einstein in 1915, has not only quantitatively improved on Newtonian Mechanics, but it has also shown that some of its basic concepts, such as force, absolute time and space, and gravitation as a direct and instantaneous action of one body on another, are essentially meaningless even if sometimes convenient for approximate calculation. Seemingly reasonable intuition was replaced by a set of physical postulates and mathematical axioms. This in turn led not only to advances in related fields such as relativistic cosmology, but also to new methods in differential geometry, and to technological advances such as GPS, differential–geometric methods in computer vision, and, more recently, interferometry in relation to the detection of gravitational waves.

This Special Issue welcomes research and review papers on the mathematical development of General Relativity. Papers that focus on observational or experimental work are also welcome; however, they should spell out the modeling assumptions in mathematical form, preferably as a set of axioms.

Prof. Dr. Satyanad Kichenassamy
Guest Editor

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Message from the Editor-in-Chief

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