Special Issue

Probabilistic Method in Fractional Calculus

Message from the Guest Editors

The theory of fractional differential equations was initiated in the 19th century with the works of Riemann and Liouville, who introduced the basic objects of the theory, fractional integrals and fractional derivatives, now referred to usually as the Riemann-Liouville (RL) fractional integrals and fractional derivatives. Many versions of these definitions have appeared in the literature since then, including Gruenwald-Letnikov derivatives, Caputo derivatives and their multidimensional analogs. Remaining in a "sleepy mode" for an extended period, the theory of fractional equations started flourishing in recent decades, because it has been finally found to be extremely important for immense amounts of models in practically any domain of natural sciences, as well as in modelling social and economic behaviour. Together with new areas of applications, lots of new links with other domains of mathematics have been found and successfully exploited, both giving new insights into "fractional theory" and in the related domains. Prof. Dr. Vassili N. Kolokoltsov

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