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## Special Issue "Recent Advances in PDE and Their Applications" PREFACE

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**Key Words:** partial differential equations; elliptic equations; hyperbolic-parabolic equations; pseudo-differential equations; integro-differential equations; boundary value problem; Dirichelt problem; stochastic equations; well-posedness; regular solutions; extremum principle; Fourier method; numerical methods and solutions, difference scheme; stability; Stefan problem

Partial differential equations govern many phenomena that happen in nature and play an important role in the modeling of processes of engineering and technology. Essentially all the fundamental partial differential equations are very difficult to solve explicitly. The studies of well-posed and ill-posed

classical and nonclassical boundary value problems for partial differential equations are driven not only by a theoretical interest but also by the fact that several phenomena in engineering, various fields of applied mathematics can be modeled and investigated in this way.

The present special issue contains 16 high-quality research papers, selected among these presented for the Fifth International Conference on Analysis and Applied Mathematics, ICAAM-2020 (that was planned to be held on September 23-30, 2020 in Girne (Kyrenia), Mersin 10, Turkey but that was postponed in time due to the COVID-19 pandemic). All these have been accepted after peer-reviewing and contain numerous new results in the fields of construction and investigation of solutions of well-posed and ill-posed boundary value problems for partial differential equations and their related applications.

The authors of the selected papers are from different countries: Turkey, Kazakhstan, USA, Russian Federation, Algeria, Krgzistan, Uzbekistan. Especially, we are pleased with the fact that many articles are written by co-authors who work in different universities around the world. We are confident that such international integration provides an opportunity for a significant increase in the quality and quantity of scientific publications.

Guest-Editors: A. Ashyralyev and V. Kiryakova

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