



# Dolomites Research Notes on Approximation

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## International E-Conference on Mathematical and Statistical Sciences: A Selcuk Meeting 2022 (ICOMSS'22)

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### Abstract

The guest editor provides a summary of the aims of the "International E-Conference on Mathematical and Statistical Sciences: A Selcuk Meeting" and discusses the highlights of the Conference. Also, briefly introduces the papers included in this special issue.

## 1 Report on the Conference

The virtual conference *International E-Conference on Mathematical and Statistical Sciences: A Selcuk Meeting 2022* was held on October 20-22, 2022. By organizing this e-conference, our main aim was to promote, encourage, and provide a forum for the academic exchange of ideas and recent research works.

Throughout this three-days event we had 177 oral presentations and totally 302 participants from 28 different countries. In our conferences, we provide a forum for mathematicians and statistician to communicate recent research results in the areas of Algebra and Applied Mathematics, Analysis, Geometry and Topology, Actuarial Science, Applied Statistics and Statistical Theory.

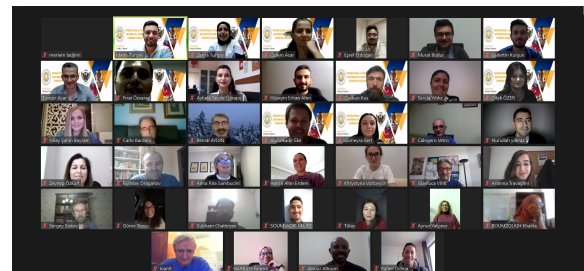


Figure 1: Opening (on the left) and closing (on the right) ceremony of the ICOMSS'22

The Conference featured fifteen plenary speakers:

- Francesco Altomare, University of Bari, Italy:  
*Local Approximation Problems and Korovkin-type Theorems*
- Barry C. Arnold, University of California, USA:  
*Model Building Using Independent Gamma Distributed Components*
- Narayanaswamy Balakrishnan, McMaster University, Canada:  
*Cumulative Residual and Relative Cumulative Residual Fisher Information and their Properties*
- İsmihan Bayramoğlu, İzmir University of Economics, Türkiye:  
*On New Properties of Conditional Expectations and Their Applications*
- Vasile Berinde, North University Center at Baia Mare, Romania:  
*A Unified Treatment of Some Convergence Theorems for Fixed Point Algorithms in the Class of Demicontractive Mappings*
- Borislav R. Draganov, Sofia University, Bulgaria:  
*Verifying Approximation Estimates for Convolution Operators in Homogeneous Banach Spaces*

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- Serkan Eryılmaz, Atılım University, Türkiye:  
*Discrete Time Reliability Systems and Some Optimization Problems*
- Erdal Karapınar, Çankaya University, Türkiye:  
*Certain Remarks on the Recent Publications on Metric Fixed Point Theory*
- Stefano De Marchi, University of Padova, Italy:  
 *$(\beta; \gamma)$ -Chebyshev Functions and Points of the Interval and Some Extensions*
- Haikady N Nagaraja, Ohio State University, USA:  
*Large-Sample Properties of Jackknife. Estimators of the Variance of a Sample Quantile*
- Hon Keung Tony Ng, Bentley University, USA:  
*Semiparametric and Nonparametric Evaluation of First-Passage Distribution of Bivariate Degradation Processes*
- Ioan Raşa, Technical University of Cluj, Romania:  
*Functional Equations Related to Appell Polynomials and Heun Functions*
- Ekrem Savaş, Rector of Uşak University, Türkiye:  
*Almost Lacunary Strong  $(A; \varphi)$ -convergence of Order*
- Calogero Vetro, University of Palermo, Italy:  
*A Galerkin Approach to the Solution of Anisotropic Kirchhoff-type Problems with Convection Term*
- Gianluca Vinti, University of Perugia, Italy:  
*A Mathematical Model for the Study of Vascular Pathologies*

The complete details of the Conference are available on the website:

<https://icomss22.selcuk.edu.tr/>



Figure 2: ICOMSS'22 Logo

## 2 Introducing the Special Issue

During the conference the speakers were invited to submit contributions for a special volume of the Dolomites Research Notes on Approximation (DRNA). After peer-revision, we are pleased to announce that the following papers have been included in the volume:

- *Pointwise convergence of generalized Kantorovich exponential sampling series*, by T. Acar and S. Kursun [1]. In this work, authors obtain an estimate for the remainder of Mellin-Taylor's formula in order to investigate pointwise convergence of the family of operators  $K_w^{\lambda, \sigma}$ , and using this estimate they give the Voronovskaya theorem in quantitative form by means of Mellin derivatives.
- *Approximation by bivariate generalized sampling series in weighted spaces of functions*, by T. Acar and M. Turgay [2]. In this paper, authors study weighted approximation by bivariate generalized sampling series. They obtain pointwise and uniform convergence of the series. A rate of convergence is also presented by means of weighted modulus of continuity. In order to determine a rate of pointwise convergence, they present a quantitative Voronovskaja theorem. Some numerical examples are also included.
- *Strongly convex squared norms*, by A. M. Acu, Ioan Raşa and A. E. Ştepoaie [3]. By motivating from the fact that a strongly convex squared norm plays a role in quantitative Korovkin approximation, authors studied strong convexity of  $\| \cdot \|_p^2$  on  $\mathbb{R}^2$ ,  $1 < p < 2$ .

- *An extension of Korovkin theorem via  $P$ -statistical  $\mathcal{A}$ -summation process*, by K. Demirci, F. Dirik and S. Yıldız [4]. The work deals with the study and prove Korovkin-type approximation theorems for linear operators defined on derivatives of functions by means of  $\mathcal{A}$ -summation process via statistical convergence with respect to power series method.
- *Voronovskaya estimates for convolution operators*, by B. R. Draganov [5]. In this work, author present a general method for establishing quantitative Voronovskaya type estimates of convolution operators on homogeneous Banach spaces of periodic functions of one real variable or of functions on the real line.
- *Almost lacunary strong  $(D, \mu)$ - convergence of order  $\alpha$* , by E. Savaş [6]. In this work, author present a new almost strong sequence space of order  $\alpha$  generated by real matrix  $D$  and also he examine some properties of this sequence space.
- *Construction of Hurwitz stability intervals for matrix families*, by G. Topcu and K. Aydın [7]. This paper deals with Hurwitz stability of the matrix families  $L$  and  $C$  which consist of linear sum and convex combination, respectively. Authors determines the intervals  $\mathcal{I}_L$  and  $\mathcal{I}_C$  for the matrix families so that the linear sum family and convex combination family are Hurwitz stable.
- *Construction of bivariate modified Bernstein-Chlodowsky operators and approximation theorems*, by S. Yıldız and N. Şahin Bayram [8]. In this work, the authors modify the Bernstein-Chlodowsky operators by using a weaker condition than the classical Bernstein-Chlodowsky operators' condition. They obtain approximation properties for these positive linear operators and their generalizations, as well as the rate of convergence of these operators calculated using the modulus of continuity and Lipschitz class of the functions of  $f$  of two variables.

### 3 Acknowledgements

We are thankful to all scientific committee members, organizing committee members, session chairs, and numerous volunteers. Without their generous contributions, this conference would not have achieved this number of presentations and participants. We are also thankful to the editors of the DRNA journal for enabling the fulfillment of this volume.

Special thanks are also due to the reviewers for their relevant comments which helped to improve the quality and clarity of the papers published in this issue.

### References

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- [8] S. Yıldız and N. Şahin Bayram. Construction of bivariate modified Bernstein-Chlodowsky operators and approximation theorems. *Dolomites Res. Notes Approx.*, Special Issue ICOMSS'22, 16:64–71, 2023.