



University of Cyprus
Department of Mathematics
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Re: Application of Cyprus for the International Mathematical Union Full Membership

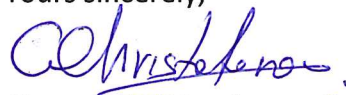
Dear Members of the Executive Committee of the IMU,

Cyprus, officially the Republic of Cyprus, is a small country in Eastern Mediterranean and its first university, the University of Cyprus (UCY), was founded in 1992 as a public research-oriented university. From the early stages of the university's history, the Department of Mathematics and Statistics has been active in mathematical research and its activities as well as its accomplishments demonstrate the necessity for Cyprus to join the IMU.

Based on the Department's request, the Rector's Council of the University of Cyprus decided in its meeting on November 15, 2018 (28/2018) to apply to the IMU for full membership and on February 19, 2019 (7/2019) approved to cover the membership fee from the university budget following the suggestion of the Committee of International Relations. At the same meeting (28/2018), the Rector's Council decided that the University of Cyprus - Department of Mathematics and Statistics would be the adhering institution and I, Assoc. Prof. Cleopatra Christoforou, was appointed as the representative to IMU.

In view of the above, on behalf of the university, I ask herewith to grant Republic of Cyprus and its mathematicians the full membership of the IMU. Based on the small size of the country, Group I of the membership would be the most appropriate one. A report about the state of mathematics in Cyprus can be found in the attached document.

Yours sincerely,


Cleopatra Christoforou

APPLICATION OF CYPRUS TO BECOME A FULL MEMBER OF THE IMU

Cyprus, officially the Republic of Cyprus, is a small island in the Eastern Mediterranean. It joined the European Union in May 2004 and the eurozone in 2008. Cyprus has an estimated population of 1.1 million, that consists of Greek Cypriots (77%), Turkish Cypriots (18%), Latins, Maronites and Armenians.

Cyprus is a small and adaptable free-market economy with a positive long-term outlook. The island promotes itself as the business gateway between Europe, Asia, the Middle East and Africa, and leverages its highly educated, English-speaking population. Throughout its history the Cyprus economy has experienced external shocks that have been followed by astonishing revival. The economy has gone through several transformations: from an exporter of minerals and agricultural products (1961–73), an exporter of manufactured goods from the late 1970s to the early 1980s, to transforming into an international tourist, business and services centre since the 1980-1990s. Today the economy is mainly built upon services sector, including tourism, financial services and real estate, which accounts for over 80% of both total GDP and employment. Cyprus was listed by the IMF as one of the 31 advanced economies in the world in 2016.

The University of Cyprus (UCY) was the first university founded in Cyprus and it is now one of the three public universities in Cyprus. It was established in 1989 and admitted the first students in 1992. Prior to that, there were several higher educational institutions supplying partial higher education, some public and some private ones. Mainly, the Cypriot students had to go abroad in order to study at a university and usually they enrolled at the universities in Greece after succeeding in a competitive entering examination system. This system was only for Cypriot students who wished to study at the public universities in Greece. Other students who wished to study abroad at a university would go to UK, France, Germany, Russia, Romania and other European countries or to USA.

The University of Cyprus (UCY) was founded with the aim to establish itself as a pioneer research institution achieving international scientific recognition in European Higher Education, offering competitive programmes and to become a centre of excellence in the wider Euro - Mediterranean region. The main objectives of UCY are twofold: the promotion of scholarship and education through teaching and research, and the enhancement of the cultural, social and economic development of Cyprus. Research is promoted and funded in all departments for its contribution to scholarship in general and for its local and international applications. Despite its brief history, the University of Cyprus has earned the respect of the international academic community and the appreciation of Cypriot society and is internationally recognized as a leading research institution. UCY was ranked first among the top 10 national beneficiaries of the EC financial contribution according to the e-CORDA data update on July 2014. Admission for the majority of undergraduate students is by entrance examinations organized by the Ministry of Education and Culture, and the competition for places is intense. With more than 7000 students (undergraduate - 5265 and postgraduate -1760), UCY offers 36 Bachelor, 68 Master and 42 doctoral degrees and there are 8 faculties, 22 departments and 11 research centers. UCY has participated to several projects funded under Horizon 2020, FP7, Erasmus Plus, EU Life Long Learning Programme, ERC, COST, EU-ROCORES, JPI, Teaming & EU Structural grants such as Tempus and Archimed. Currently, UCY is participating in 128 EU funded projects, running 5 ERC projects and 20 MSCA actions. At the

moment, UCY actively participates in around 60 university networks/associations internationally, both at a central level as well as departmentally. Some of the networks in which UCY is most active are: UNICA, UNIMED, EUA, Santander Group, ERCIM, EFQM, etc.

The Department of Mathematics and Statistics (MAS) at UCY is the most important entity doing mathematical research in Cyprus. MAS is part of the Faculty of Pure and Applied Sciences and it has 23 faculty as well as about 10 visiting professors and teaching special scientists. It carries out research on an international level, both in theoretical and applied aspects of mathematics and statistics. The main core research directions are represented by groups in the following areas: (1) Algebra and Number Theory; (2) Algebraic and Differential Geometry; (3) Numerical Analysis and Computational Mathematics; (4) Differential Equations and Mathematical Physics (5) Harmonic and Complex Analysis and (6) Probability and Statistics.

Most research mathematicians in Cyprus are present at MAS of UCY and therefore, University of Cyprus will be the adhering institution for the IMU.

In the period 2015–18, that is the latest evaluation period, the 23 faculty members of MAS published a total of 175 refereed articles in international mathematical journal, authored quite a few books, volumes, conference proceedings and chapters (counting over 33) and carried out 26 research programs. They also organized several international conferences, workshops and schools, (11 of them taking place in Cyprus (listed in Appendix B)), and 83 seminar talks from visiting scholars at the department. They also gave 157 talks at conferences, universities or research centers abroad and they actively participate in several international research networks, acting as members of journal editorial boards and panels of funding agencies.

The graduates of MAS are in majority employed (i) as tutors to high school students or teachers in private schools or colleges, (ii) as state employees in customs and excise, state education, statistical service or other state services or (iii) in private companies, such as banks, insurance companies, accountancy firms etc. Many of them after completing their undergraduate degree, they pursue graduate studies abroad, either a Master or a PhD, mainly in math, science or economics.

Outside MAS, but within UCY, there is the Department of Education which has a part devoted in the didactics in mathematics as a scientific discipline. Outside UCY, there are two public universities where service courses in mathematics are taught and no degree in Mathematics is offered. There are also several private universities and colleges that are teaching-oriented, with only two of them offering an undergraduate degree in mathematics.

Except of research mathematicians, there are plenty of math teachers for secondary education and most of them are members of the Cyprus Mathematical Society (CMS); a non-for-profit organization established since 1983. The CMS promotes mathematics education and science and it's a member of the European Mathematical Society (EMS) and a founding member of the Mathematical Society of South Eastern Europe (MASSEE). It organizes all national mathematics competitions, it is involved in international conferences such as the EUROMATH and publishes the "Mediterranean Journal for Research in Mathematics Education". The Cyprus Academy of Science, Letters and Arts was founded in 2017 and very recently, in April 2019, its 12 founding members were selected.

STATISTICAL MATERIAL.

1. Number of universities in the Republic of Cyprus with a degree in mathematics: 3
2. List of universities with significant research activities in mathematics: **University of Cyprus**
3. Number of academic math professors at UCY: 23
4. Number of refereed mathematical (international) publications by the math professors at UCY: 46 per year (estimated)
5. A list of Academic Faculty at Department of Mathematics and Statistics of UCY and their research interests can be found in Appendix A.
6. Number of research mathematicians at UCY: 33
7. Number of research mathematicians in the country: 50 (estimated)
8. Mathematical Society: Cyprus Mathematical Society (CMS)
9. Educational Activities: The Department of Mathematics and Statistics (MAS) at UCY offers undergraduate studies that lead to a Bachelor Degree (BSc) in Mathematics and Statistics (with the three directions Applied Mathematics, Pure Mathematics or Probability and Statistics), a Bachelor in Mathematics and Economic (joint degree with the Economics Department) and postgraduate programmes which lead to a Master Degree (MSc) (with directions in Mathematical Sciences or Applied Statistics), a Master Degree in Data Science (joint degree with the Computer Science Department) and a Doctor of Philosophy Degree (PhD) in Mathematics or Statistics.
In addition, MAS is engaged in a number of outreach activities addressing the pupils of secondary schools in coordination with the Cyprus Mathematical Society.
10. During the period 2015–2018, MAS organized 11 conferences and workshops (listed in Appendix B) and 83 seminar talks in Cyprus.

ADHERING ORGANISATION OF CYPRUS:

The Department of Mathematics and Statistics

University of Cyprus

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E-MAIL: commas@ucy.ac.cy

URL: <http://www.ucy.ac.cy/mas/en/>

PRESIDENT:

Prof. Cleopatra Christoforou

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TEL: +357 – 22892648

URL: <http://www.mas.ucy.ac.cy/~kleopatr/Home/>

GENERIC E-MAIL FOR IMU PURPOSE: masunion@ucy.ac.cy

A LIST OF ACADEMIC FACULTY AT DEPT. OF MATHEMATICS AND STATISTICS AT UCY

- CHRISTOFIDES TASOS, Professor
PhD in Mathematical Sciences, (1987) The Johns Hopkins University, USA.
Research Interests: Probability Inequalities, Demimartingales, Stochastic Orders, Survey Methodology, Indirect Questioning Techniques.
- DAMIANOU PANTELIS, Professor
PhD in Mathematics, (1989), University of Arizona, USA.
Research Interests: Poisson Geometry, Integrable Systems, Lie groups, Number Theory.
- FOKIANOS KONSTANTINOS, Professor
Ph.D. in Statistics, (1996), University of Maryland, College Park, USA.
Research Interests: Categorical Time Series, Generalized Models for Time Series, Semiparametric Models, Spatial Data Analysis, Bioinformatics, Analysis of Large Data Sets.
- GEORGIU GIORGOS, Professor
Ph.D. in Chemical Engineering (1989), University of Michigan, USA.
Research Interests: Computational Rheology, Numerical Simulations of Viscoelastic Flows, Numerical Solution of PDEs, Finite Element Methods, Computational Oceanography.
- KARAGEOGHIS ANDREAS, Professor
DPhil in Mathematics, (1984) Oxford University, UK.
Research Interests: Numerical Analysis, Scientific Computing.
- KOUMANDOS STAMATIS, Professor
Ph.D. in Mathematics, (1991), University of Thessaloniki, Greece.
Research Interests: Harmonic analysis, Orthogonal polynomials, Special functions, Approximation theory, Fourier analysis, Geometric function theory, Analytic number theory.
- KYRIAZIS GEORGE, Professor
Ph.D. in Mathematics (1992), University of South Carolina, USA.
Research Interests: Approximation Theory, Harmonic Analysis and the related topics of classical analysis including the study of decomposition systems on various spaces of distributions.
- PAPARODITIS EFSTATHIOS, Professor
Ph.D. in Mathematical Statistics, (1990), Freie Universiaet Berlin, Federal Republic of Germany
Research Interests: Time Series Analysis, Inference for Stochastic Processes Resampling and Bootstrap Methods, Nonparametric Methods Goodness-of-fit.
- SAPATINAS THEOFANIS, Professor
PhD in Statistics, (1994), University of Sheffield, United Kingdom.
Research Interests: Nonparametric Curve Estimation and Related Problems, Wavelets in Statistics and Time Series Analysis, Nonparametric and Semiparametric Volatility Estimation, Functional Data Analysis, Characterizations and Structural Properties of Probability Distributions.

- SMYRLIS YIORGOS-SOKRATIS, Professor
Ph.D. in Mathematics (1989), Courant Institute, New York University, USA.
Research Interests: Conservation Laws. Numerical methods for elliptic boundary value problems. Density results with linear combinations of particular solutions of elliptic equations. Dissipative and dispersivedissipative dynamical systems. Development of linearly implicit schemes for nonlinear parabolic equations.
- SOPHOCLEOUS CHRISTODOULOS, Professor
PhD in Mathematics, (1991) University of Nottingham, UK.
Research Interests: Lie Group Analysis of Differential Equations.
- STYLIANOPOULOS NIKOS, Professor
Ph.D. in Mathematics, (1990), Brunel University, UK.
Research Interests: Functions of a Complex Variable: Orthogonal polynomials, theory and applications, Approximation in the complex plane, Numerical methods in conformal mapping, General theory of conformal mapping, Quasiconformal mapping; Numerical analysis: Numerical methods in complex analysis, Iterative methods for linear systems, Numerical solution of PDEs, Moment problems; Potential theory: Potentials and capacity, extremal length, Inverse potential problems, Harmonic, subharmonic, superharmonic functions.
- TZIOLAS NIKOLAOS, Professor
Ph.D. in Mathematics, (1999), University of Utah, USA.
Research Interests: Algebraic Geometry.
- VIDRAS ALEKOS, Professor
Ph.D in Mathematics (1992), University of Maryland, College Park, USA.
Research Interests: Complex Analysis. In particular, Entire functions, Classes of holomorphic functions representable by Carleman formula. Residues in Several Complex variables.
- XENOPHONTOS CHRISTOS, Professor
Ph.D. in Applied Mathematics (1996) University of Maryland, Baltimore, County, USA.
Research Interests: Numerical Analysis, Numerical Solution of Partial Differential Equations, Finite Element Methods, Computational Mechanics.
- CHARALAMBOUS NELIA, Associate Professor
Ph.D in Mathematics (2004), Cornell University, USA.
Research Interests: Global Analysis, Analysis and Partial Differential Equations on Manifolds, Mathematical Physics.
- CHRISTOFOROU CLEOPATRA, Associate Professor
Ph.D. in Mathematics, (2004) Brown University, Providence, RI, USA.
Research Interests: Partial Differential Equations and Applied Analysis; Continuum Mechanics and Hyperbolic Conservation Laws; Vanishing Viscosity Limits and Formation of Shock Waves.
- MILAKIS EMMANOUIL, Associate Professor
Ph.D. in Applied Mathematics (2006), University of Crete, Greece.
Research Interests: Partial Differential Equations, Free Boundary Problems, Geometric Measure Theory.

- PALLIKAROS CHRISTOS, Associate Professor
Ph.D. in Mathematics (1993) Imperial College, University of London, UK.
Research Interests: Group Representation Theory, Algebraic Combinatorics.
- SAMIOU EVANGELIA, Associate Professor
Dr. rer. nat. (1997) University of Augsburg, Germany.
Research Interests: Differential Geometry.
- BAXEVANI ANASTASSIA, Assistant Professor
Docent in Mathematics, (2011) University of Gothenburg, Sweden.
Ph.D in Mathematical Statistics, (2004) Lund University, Sweden.
Research Interests: Random Spatio-temporal Fields, Non-Gaussian Stochastic Models, Stochastic Processes, Applications to Engineering, Environmental Sciences, Modelling of Sea Surfaces, Environmental statistics.
- IERONYMOU EVIS, Assistant Professor
Ph.D in Mathematics (2008), Imperial College London, UK.
Research Interests: Algebraic Geometry, Number Theory, Arithmetic Algebraic Geometry, Brauer-Manin obstructions.
- AGAPIOU SERGIOS, Lecturer
Ph.D. in Mathematics, (2013) University of Warwick, UK.
Research Interests: Problems at the interface of Differential Equations and Statistics in high dimensions, Bayesian regularization of Inverse Problems, Statistical Simulation and Inference, Monte Carlo and Markov chain Monte Carlo methods in function space, Posterior Consistency, Statistical Learning.
- PAPAMICHAEL NICOLAS, Emeritus Professor
PhD in Mathematics, (1974) Brunel University, UK.
Research Interests: Computational complex analysis, Numerical conformal mapping, Spline functions

B CONFERENCES ORGANIZED IN CYPRUS (2015–18)

- Workshop on dissipation and Invariant sets, Oct. 12-13, 2015, Larnaca, Cyprus.
- 8th Workshop on Group Analysis of Differential Equations and Integrable Systems, June 12–17, 2016, Larnaca, Cyprus.
- Recent developments in Lie Theory and Poisson Geometry, June 15–18, 2016, Larnaca, Cyprus.
- University of Diaspora, In honor of *Professor Constantine M. Dafermos*, from Brown University December 2016, Nicosia, Cyprus.
- Workshop: New Trends in Nonlinear PDEs, May 19, 2017, Nicosia, Cyprus.
- 8th Scientific Conference of the Hellenic Society of Rheology, July 12–14, 2017, Limassol, Cyprus.

- Contemporary Aspects of Analysis, May 1–6, 2017, Protaras, Cyprus.
- 13th Panhellenic Conference in Geometry, May 26–28, 2017, Larnaca, Cyprus.
- University of Diaspora, In honor of *Professor George Michailidis* from University of Florida, USA, Nov-Dec. 2017, Nicosia, Cyprus.
- 9th Workshop on Group Analysis of Differential Equations and Integrable systems, June 10–14, 2018, Larnaca, Cyprus.
- 15th Annual Workshop on Numerical Methods with Layer Phenomena, May 24–25, 2018, Larnaca, Cyprus.