

Report on the evaluation of the publications in 2022

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As in the previous 10 years, members of the Council of the project Cooperatio – Mathematics¹ (successor to PRVOUK P47 and Progres Q49) have evaluated the publications published in 2022 by the members of the School of Mathematics, and decided on the rewards for the authors of the best of them. The decision-making process is described in more detail on the next page.

Summary

The members of the Council had complete information on all publications kept in the OBD/RIV database with the year of publication 2022, for which at least one of the authors was a member of the School of Mathematics. There were the **214** publications, all having RIV status "accepted". In the most important category of original scientific articles, we have recorded **208** of which **188** were published in journals with IF. More detailed information on publications in the main categories, including the history since 2012, can be found in the following table.

Publications of the members of the School of Mathematics since 2012

year	journal with IF	journal without IF	journal total	book / monograph	chapter in monograph	conference proceeding	total
2012	139	41	180	1	10	69	271
2013	157	34	191	6	7	53	257
2014	147	25	172	3	6	53	234
2015	166	27	193	5	6	48	252
2016	152	23	175	2	2	39	218
2017	156	27	183	1	5	27	232
2018	164	28	192	2	18	34	246
2019	154	37	191	7	16	35	249
2020	189	29	218	7	14	38	277
2021	190	30	220	0	2	23	245
2022	188	20	208	2	0	4	214

The following table shows the number of journal publications in D1, Q1, Q2, Q3 and Q4 quartiles according to AIS factor. Each journal has one AIS factor but the journal can belong to different quartiles according to the journal groups, e.g., "Q1 - Mathematics" & "Q2 - Mathematics, Applied". In this case, the best group is taken into account. The group Q1 includes also D1.

year	D1	Q1	Q2	Q3	Q4	total
2022	24	67	26	38	14	145

¹<https://www.mff.cuni.cz/en/math/research/cooperatio>

A description of the process of evaluation

Each member of the Council received a complete list of all publications including the link to the electronic version of publication ordered with the descending order of AIS journals and indication to which group D1, Q1, Q2, Q3, Q4 they belong.

In the first evaluation round, each member of the Council proposed best publications in his area of expertise. It was possible to give the marks “A” or “B” in order to express the preference. The list of 64 publications having at least one mark had arisen.

Then coordinator prepared table with the indicated marks and proposed an evaluation of the publications 5 days before the meeting of the council which hold on May 18, 2023. Then this proposal has been discussed and some modifications have been carried out. Some minor modification were carried out after the meeting and the final list of the awarded publications has been approved per-rolam during May 22-24, 2023.

Members of the Cooperatio Council decided in advance (as in previous years) that they themselves cannot be rewarded for publications. However, co-authors of publications who are not members of the Cooperatio Council may be rewarded.

Selected publications

(A) List of **18 publications** in the **Elite** category, whose (co) authors are members of the School of Mathematics, and who affiliated their publication to MFF UK (the order of publications is random). Only the highlighted authors could be rewarded (i.e. they have an employment relationship with the MFF and at the same time are not members of the Cooperatio Council; alternatively they are students of the MFF).

- BREIT, D. - CIANCHI, A. - DIENING, L. - **SCHWARZACHER, Sebastian**. Global Schauder Estimates for the p -Laplace System. *Archive for Rational Mechanics and Analysis*. 2022, 243(1), 201-255. ISSN 0003-9527. [link](#)
- **ZHUK, Dmitrii** - MARTIN, Barnaby. QCSP Monsters and the Demise of the Chen Conjecture. *Journal of the ACM*. 2022, 69(5), 35. ISSN 0004-5411. [link](#)
- **CÚTH, Marek** - DOLEZAL, Martin - DOUCHA, Michal - KURKA, Ondrej. Polish spaces of Banach spaces. *Forum of Mathematics Sigma*. 2022, 10(2022), e26. ISSN 2050-5094. [link](#)
- **OPPER, Sebastian** - ZVONAREVA, Alexandra. Derived equivalence classification of Brauer graph algebras. *Advances in Mathematics*. 2022, 402(402), 108341. ISSN 0001-8708. [link](#)
- NAVARRO, Paula P. - VETTIGER, Andrea - ANANDA, Virly Y. - LLOPIS, Paula Montero - **ALLOLIO, Christoph** - BERNHARDT, Thomas G. - CHAO, Luke H.. Cell wall synthesis and remodelling dynamics determine division site architecture and cell shape in *Escherichia coli*. *Nature Microbiology* [online]. 2022, 7(10), 1621-1634. ISSN 2058-5276. [link](#)
- **KHANIKI, Erfan**. Not all Kripke models of HA are locally PA. *Advances in Mathematics*. 2022, 2022(397), 108126. ISSN 0001-8708. [link](#)
- **KUČERA, Václav** - LUKACOVA-MEDVID'OVA, Maria - NOELLE, Sebastian - SCHUETZ, Jochen. Asymptotic properties of a class of linearly implicit schemes for weakly compressible Euler equations. *Numerische Mathematik*. 2022, 150(1), 79-103. ISSN 0029-599X. [link](#)
- **SOMBERG, Petr** - HU, Po - KRIZ, Igor. On the equivariant motivic filtration of the topological Hochschild homology of polynomial algebras. *Advances in Mathematics*. 2022, 2023(412), 108803. ISSN 0001-8708. [link](#)

- ČOUPEK, Petr - MASLOWSKI, Bohdan - ONDREJÁT, Martin. Stochastic integration with respect to fractional processes in Banach spaces. *Journal of Functional Analysis*. 2022, 282(8), 109393. ISSN 0022-1236. [link](#)
- JOHN, Volker - KNOBLOCH, Petr. On algebraically stabilized schemes for convection-diffusion-reaction problems. *Numerische Mathematik*. 2022, 152(3), 553-585. ISSN 0029-599X. [link](#)
- FERRATY, F. - NAGY, Stanislav. Scalar-on-function local linear regression and beyond. *Biometrika*. 2022, 109(2), 439-455. ISSN 0006-3444. [link](#)
- BĚLOHLÁVEK, Jan - ŠMALCOVÁ, Jana - ROB, Daniel - FRANEK, Ondrej - ŠMÍD, Ondřej - POKORNA, Milana - HORÁK, Jan - MRÁZEK, Vratislav - KOVÁRNÍK, Tomáš - ZEMÁNEK, David - KRÁL, Aleš - HAVRÁNEK, Štěpán - KAVÁLKOVÁ, Petra - KOMPELENTOVA, Lucie - TOMKOVA, Helena - MEJSTRIK, Alan - VALASEK, Jaroslav - PERAN, David - PEKARA, Jaroslav - RULÍŠEK, Jan - BALÍK, Martin - HUPTYCH, Michal - JARKOVSKY, Jiri - MALÍK, Jan - VALERIANOVÁ, Anna - MLEJNSKÝ, František - KOLOUCH, Petr - HAVRÁNKOVÁ, Petra - ROMPORTL, Dan - KOMÁREK, Arnošt - LINHART, Aleš. Effect of Intra-arrest Transport, Extracorporeal Cardiopulmonary Resuscitation, and Immediate Invasive Assessment and Treatment on Functional Neurologic Outcome in Refractory Out-of-Hospital Cardiac Arrest: A Randomized Clinical Trial. *JAMA: The Journal of the American Medical Association*. 2022, 327(8), 737-747. ISSN 0098-7484. [link](#)
- GRAFAKOS, Loukas - MASTYLO, Mieczyslaw - SLAVÍKOVÁ, Lenka. A sharp variant of the Marcinkiewicz theorem with multipliers in Sobolev spaces of Lorentz type. *Journal of Functional Analysis*. 2022, 282(3), 109295. ISSN 0022-1236. [link](#)
- KOROTOV, Sergey - KRIZEK, Michal - KUČERA, Václav. On degenerating finite element tetrahedral partitions. *Numerische Mathematik*. 2022, 152(2), 307-329. ISSN 0029-599X. [link](#)
- DIAZ GARCIA, Freddy - O'BUACHALLA, Re - WAGNER, Elmar. A Dolbeault-Dirac Spectral Triple for the B2-Irreducible Quantum Flag Manifold. *Communications in Mathematical Physics*. 2022, 2022/395(395), 365-403. ISSN 0010-3616. [link](#)
- CHABINIOK, R. - HRON, Jaroslav - JAROLÍMOVÁ, Alena - MÁLEK, Josef - RAJAGOPAL, K. R. - RAJAGOPAL, K. - ŠVIHLOVÁ, Helena - TŮMA, Karel. Three-dimensional flows of incompressible Navier–Stokes fluids in tubes containing a sinus, with varying slip conditions at the wall. *International Journal of Engineering Science*. 2022, 180(1 October 2022), 1-22. ISSN 0020-7225. [link](#)
- GRAVINA, Giovanni - SCHWARZACHER, Sebastian - SOUČEK, Ondřej - TŮMA, Karel. Contactless rebound of elastic bodies in a viscous incompressible fluid. *Journal of Fluid Mechanics*. 2022, 942(10 July 2022), 1-46. ISSN 0022-1120. [link](#)
- HOLICKÝ, Petr - ZELENÝ, Miroslav. There is no bound on Borel classes of graphs in the Luzin–Novikov theorem. *Dissertationes Mathematicae*. 2022, 576(1), 1-77. ISSN 0012-3862. [link](#)

(B) List of **27 publications** in the **Rewarded** category, whose (co) authors are members of the School of Mathematics, and who affiliated their publication to MFF UK (the order of publications is random). Only the highlighted authors could be rewarded (i.e. they have an employment relationship with the MFF and at the same time are not members of the Cooperatio Council; alternatively they are students of the MFF).

- GILLIBERT, Pierre - JONUSAS, Julius - KOMPATSCHER, Michael - MOTTET, Antoine - PINSKER, Michael. When symmetries are not enough: a hierarchy of hard constraint satisfaction problems. *SIAM Journal on Computing*. 2022, 2022(51), 175-213. ISSN 0097-5397. [link](#)

- CHEN, Cathy Yi-Hsuan - **HÄRDLE, Wolfgang Karl** - KLOCHKOV, Yegor. SONIC: Social Network analysis with Influencers and Communities. *Journal of Econometrics*. 2022, 228(2), 177-220. ISSN 0304-4076. [link](#)
- KIHOULOU, Martin - KALOUSOVÁ, Klára - **SOUČEK, Ondřej**. Evolution of Pluto's Impact-Deformed Ice Shell Below Sputnik Planitia Basin. *Journal of Geophysical Research. Planets*. 2022, 127(6), e2022JE007221. ISSN 2169-9097. [link](#)
- **PEŠA, Dalimil**. Wiener-Luxemburg amalgam spaces. *Journal of Functional Analysis*. 2022, 282(1), 109270. ISSN 0022-1236. [link](#)
- **GENOVESE, Francesco** - RAMOS GONZÁLES, Julia. A Derived Gabriel–Popescu Theorem for t -Structures via Derived Injectives. *International Mathematics Research Notices*. 2022, 2022(00), 1-66. ISSN 1073-7928. [link](#)
- GOGATISHVILI, Amiran - **PICK, Luboš** - ÜNVER, Tuğçe. Weighted inequalities involving Hardy and Copson operators. *Journal of Functional Analysis*. 2022, 283(2022), 1-50. ISSN 0022-1236. [link](#)
- BAZZONI, Silvana - POSITSELSKI, Leonid - **ŠTOVÍČEK, Jan**. Projective Covers of Flat Contra-modules. *International Mathematics Research Notices*. 2022, 2022(24), 19527-19564. ISSN 1073-7928. [link](#)
- **SCHWARZACHER, Sebastian** - **SHE, Bangwei**. On numerical approximations to fluid–structure interactions involving compressible fluids. *Numerische Mathematik*. 2022, 151(2022), 219-278. ISSN 0029-599X. [link](#)
- **DVOŘÁK, Jiří** - MRKVICKA, Tomas - MATEU, Jorge - GONZALEZ, Jonatan A.. Nonparametric Testing of the Dependence Structure Among Points-Marks-Covariates in Spatial Point Patterns. *International Statistical Review*. 2022, 90(3), 592-621. ISSN 0306-7734. [link](#)
- ALBIAC, Fernando - ANSORENA, Jose L. - **CÚTH, Marek** - DOUCHA, Michal. Lipschitz Algebras and Lipschitz-Free Spaces Over Unbounded Metric Spaces. *International Mathematics Research Notices*. 2022, 2022(20), 16327-16362. ISSN 1073-7928. [link](#)
- CIANCHI, Andrea - MUSIL, Vít - **PICK, Luboš**. On the Existence of Extremals for Moser-Type Inequalities in Gauss Space. *International Mathematics Research Notices*. 2022, 2022(2), 1494-1537. ISSN 1073-7928. [link](#)
- **SCHWARZACHER, Sebastian** - **SROCZINSKI, Matthias**. Weak-strong uniqueness for an elastic plate interacting with the Navier-Stokes equation. *SIAM Journal on Mathematical Analysis*. 2022, 54(4), 4104-4138. ISSN 0036-1410. [link](#)
- **GÖLOGLU, Faruk** - KÖLSCH, Lukas. AN EXPONENTIAL BOUND ON THE NUMBER OF NON-ISOTOPIC COMMUTATIVE SEMIFIELDS. *Transactions of the American Mathematical Society* [online]. 2022, 2022(jul), 210822. ISSN 1088-6850. [link](#)
- ROB, Daniel - ŠMALCOVÁ, Jana - ŠMÍD, Ondřej - KRÁL, Aleš - KOVÁRNÍK, Tomáš - ZEMÁNEK, David - KAVÁLKOVÁ, Petra - HUPTYCH, Michal - **KOMÁREK, Arnošt** - FRANEK, Ondřej - HAVRÁNEK, Štěpán - LINHART, Aleš - BĚLOHLÁVEK, Jan. Extracorporeal versus conventional cardiopulmonary resuscitation for refractory out-of-hospital cardiac arrest: a secondary analysis of the Prague OHCA trial. *Critical Care*. 2022, 26(1), 330. ISSN 1364-8535. [link](#)
- STOPKA, Tomáš - MINAŘÍK, Lubomír - DUSÍLKOVÁ, Nina - **PEŠTA, Michal** - KULVAIT, Vojtěch - ŠPAČEK, Martin - ZEMANOVÁ, Zuzana - KALOUSOVÁ, Marta - JONÁŠOVÁ, Anna. G-CSF plus azacitidine versus azacitidine alone for patients with high-risk myelodysplastic syndrome: academic, open label, randomized trial. *Blood Cancer Journal*. 2022, 12(7), 105. ISSN 2044-5385. [link](#)
- **KŘÍŽ, Pavel** - SNUPARKOVA, Jana. Pathwise least-squares estimator for linear SPDEs with additive fractional noise. *Electronic Journal of Statistics*. 2022, 16(1), 1561-1594. ISSN 1935-7524. [link](#)

- MINDRILA, Claudiu - **SCHWARZACHER, Sebastian**. Time-periodic weak solutions for an incompressible newtonian fluid interacting with an elastic plate. *SIAM Journal on Mathematical Analysis*. 2022, 54(4), 4139-4162. ISSN 0036-1410. [link](#)
- **HENDRYCH, František** - **NAGY, Stanislav**. A note on the convergence of lift zonoids of measures. *Stat [online]*. 2022, 11(1), e453. ISSN 2049-1573. [link](#)
- BULÍČEK, Miroslav - **LOS, Tomáš** - LU, Yong - **MÁLEK, Josef**. On planar flows of viscoelastic fluids of Giesekus type. *Nonlinearity*. 2022, 35(12), 6557-6604. ISSN 0951-7715. [link](#)
- SCOTT, Jennifer - **TŮMA, Miroslav**. A Computational Study of Using Black-box QR Solvers for Large-scale Sparse-dense Linear Least Squares Problems. *ACM Transactions on Mathematical Software*. 2022, 48(1), 5. ISSN 0098-3500. [link](#)
- **ČOUPEK, Petr** - DUNCAN, Tyrone E. - PASIK-DUNCAN, Bożenna. A stochastic calculus for Rosenblatt processes. *Stochastic Processes and their Applications*. 2022, 150(August 2022), 853-885. ISSN 0304-4149. [link](#)
- **CÚTH, Marek** - DOUCHA, Michal - KURKA, Ondřej. Complexity of distances: reductions of distances between metric and Banach spaces. *Israel Journal of Mathematics*. 2022, 248(2022), 383-439. ISSN 0021-2172. [link](#)
- **HLUBINKA, Daniel** - KOTÍK, Lukáš - ŠIMAN, Miroslav. Multivariate quantiles with both overall and directional probability interpretation. *Scandinavian Journal of Statistics*. 2022, 49(4), 1586-1604. ISSN 0303-6898. [link](#)
- **HUDECOVÁ, Šárka** - ŠIMAN, Miroslav. Multivariate ranks based on randomized lift-interdirections. *Computational Statistics and Data Analysis*. 2022, 172(Neuveden), 107480. ISSN 0167-9473. [link](#)
- **HLÁVKA, Zdeněk** - **HLUBINKA, Daniel** - **PAWLASOVÁ, Kateřina**. Functional ANOVA based on empirical characteristic functionals. *Journal of Multivariate Analysis*. 2022, 189(May 2022), 104878. ISSN 0047-259X. [link](#)
- **GERGELITS, Tomáš** - NIELSEN, Bjørn Fredrik - **STRAKOŠ, Zdeněk**. Numerical approximation of the spectrum of self-adjoint operators in operator preconditioning. *Numerical Algorithms*. 2022, 91(June), 301-325. ISSN 1017-1398. [link](#)
- VAGNER, Petr - **PAVELKA, Michal** - FUHRMANN, Juergen - KLIKA, Vaclav. A multiscale thermodynamic generalization of Maxwell-Stefan diffusion equations and of the dusty gas model. *International Journal of Heat and Mass Transfer*. 2022, 199(123405), 123405. ISSN 0017-9310. [link](#)

We congratulate all the rewarded authors.²

On behalf on Cooperatio Council V. Dolejší, May 23, 2023.

²The financial reward depends on the number of authors and the number of affiliations, it will be carried out on September/October 2023.