

INFINITE-DIMENSIONAL DIVISION ALGEBRAS ALGEBRAICITY AND FREENESS

Revisiting Fundamental Problems Workshop
MSRI/SLMath, December 1st to 5th, 2025

- [1] S. A. AMITSUR and L. W. SMALL, [Polynomials over division rings](#), *Israel J. Math.* **31** (1978), no. 3-4, 353–358. [MR](#) [Zbl](#)
- [2] G. ARZHANTSEVA and L. PĂUNESCU, [Linear sofic groups and algebras](#), *Trans. Amer. Math. Soc.* **369** (2017), no. 4, 2285–2310. [MR](#) [Zbl](#)
- [3] A. ATKARSKAYA, A. KANEL-BELOV, E. PLOTKIN, and E. RIPS, [Structure of small cancellation rings](#), *Math. Res. Rep.* **2** (2021), 1–14. [MR](#) [Zbl](#) [arXiv](#).
- [4] A. AUEL, E. BRUSSEL, S. GARIBALDI, and U. VISHNE, [Open problems on central simple algebras](#), *Transform. Groups* **16** (2011), no. 1, 219–264. [MR](#) [Zbl](#)
- [5] J. P. BELL, [Transcendence degree of division algebras](#), *Israel J. Math.* **190** (2012), 195–211. [MR](#) [Zbl](#)
- [6] J. P. BELL and D. ROGALSKI, [Free subalgebras of quotient rings of Ore extensions](#), *Algebra Number Theory* **6** (2012), no. 7, 1349–1367. [MR](#) [Zbl](#)
- [7] P. M. COHN, *Free rings and their relations*, London Mathematical Society Monographs **2**, Academic Press, London, England, 1971. [MR](#) [Zbl](#)
- [8] P. M. COHN, *Free ideal rings and localization in general rings*, New Mathematical Monographs **3**, Cambridge University Press, Cambridge, England, 2006, ISBN 978-0-521-85337-8; 0-521-85337-0. [MR](#) [Zbl](#)
- [9] H. DERKSEN and V. MAKAM, [On non-commutative rank and tensor rank](#), *Linear Multilinear Algebra* **66** (2018), no. 6, 1069–1084. [MR](#) [Zbl](#)
- [10] G. ELEK, [The amenability and non-amenability of skew fields](#), *Proc. Amer. Math. Soc.* **134** (2006), no. 3, 637–644. [MR](#) [Zbl](#)
- [11] K. R. GOODEARL and S. LAUNOIS, [The Dixmier–Moeglin equivalence and a Gel’fand–Kirillov problem for Poisson polynomial algebras](#), *Bull. Soc. Math. France* **139** (2011), no. 1, 1–39. [MR](#) [Zbl](#)
- [12] K. R. GOODEARL and M. T. YAKIMOV, [From quantum Ore extensions to quantum tori via noncommutative UFDs](#), *Adv. Math.* **300** (2016), 672–716. [MR](#) [Zbl](#)
- [13] I. N. HERSTEIN and S. MONTGOMERY, [A note on division rings with involutions](#), *Michigan Math. J.* **18** (1971), 75–79. [MR](#) [Zbl](#)
- [14] A. JAIKIN-ZAPIRAIN, [The universality of Hughes-free division rings](#), *Selecta Math. (N.S.)* **27** (2021), no. 4, Paper No. 74, 33 pages. [MR](#) [Zbl](#)

- [15] D. S. KALIUZHNYI-VERBOVETSKYI and V. VINNIKOV, *Foundations of free noncommutative function theory*, Mathematical Surveys and Monographs **199**, American Mathematical Society, Providence, RI, 2014. [MR](#) [Zbl](#)
- [16] G. R. KRAUSE and T. H. LENAGAN, *Growth of algebras and Gelfand–Kirillov dimension*, revised ed., Graduate Studies in Mathematics **22**, American Mathematical Society, Providence, RI, 2000, ISBN 0-8218-0859-1. [MR](#) [Zbl](#)
- [17] L. MAKAR-LIMANOV, [Algebraically closed skew fields](#), *J. Algebra* **93** (1985), no. 1, 117–135. [MR](#) [Zbl](#)
- [18] J. E. PASCOE, [The inverse function theorem and the Jacobian conjecture for free analysis](#), *Math. Z.* **278** (2014), no. 3-4, 987–994. [MR](#) [Zbl](#)
- [19] Z. REICHSTEIN, [On a question of Makar-Limanov](#), *Proc. Amer. Math. Soc.* **124** (1996), no. 1, 17–19. [MR](#) [Zbl](#)
- [20] S. J. SIERRA, [Classifying birationally commutative projective surfaces](#), *Proc. Lond. Math. Soc.* (3) **103** (2011), no. 1, 139–196. [MR](#) [Zbl](#)
- [21] A. SMOKTUNOWICZ, [Makar-Limanov’s conjecture on free subalgebras](#), *Adv. Math.* **222** (2009), no. 6, 2107–2116. [MR](#) [Zbl](#)
- [22] J. VOLČIČ, [Hilbert’s 17th problem in free skew fields](#), *Forum Math. Sigma* **9** (2021), Paper No. e61, 21 pages. [MR](#) [Zbl](#)
- [23] A. YEKUTIELI and J. J. ZHANG, [Homological transcendence degree](#), *Proc. London Math. Soc.* (3) **93** (2006), no. 1, 105–137. [MR](#) [Zbl](#)
- [24] J. J. ZHANG, [On Gel’fand–Kirillov transcendence degree](#), *Trans. Amer. Math. Soc.* **348** (1996), no. 7, 2867–2899. [MR](#) [Zbl](#)