

---

## List of publications by PD Dr. habil. Joachim Kerner

### Published articles in peer-reviewed journals

- 2022 *Lower bounds on the spectral gap of one-dimensional Schrödinger operators*, Archiv der Mathematik, <https://link.springer.com/article/10.1007/s00013-022-01786-2>
- 2022 *On the spectral gap of higher-dimensional Schrödinger operators on large domains*, in collaboration with M. Täufer, Asymptotic Analysis, doi:10.3233/ASY-221806
- 2022 *Bose–Einstein condensation for particles with repulsive short-range pair interactions in a Poisson random external potential in  $\mathbb{R}^d$* , in collaboration with M. Pechmann, Journal of Applied Probability, <https://doi.org/10.1017/jpr.2022.54>
- 2021 *On the number of nodal domains on a rectangle with a slit*, Methods of Functional Analysis and Topology, <http://mfat.imath.kiev.ua/article/?id=1698>
- 2021 *On the effect of repulsive interactions on Bose-Einstein condensation in the Luttinger-Sy model*, in collaboration with M. Pechmann, Proc. Amer. Math. Soc., <https://doi.org/10.1090/proc/15424>
- 2020 *Bound states of a pair of particles on the half-line with a general interaction potential*, in collaboration with S. Egger and K. Pankrashkin, J. Spectr. Theory 10 (2020), 1413-1444
- 2020 *On a condition for type-I Bose-Einstein condensation in random potentials in  $d$  dimensions*, in collaboration with W. Spitzer and M. Pechmann, Journal de Mathématiques Pures et Appliquées, <https://doi.org/10.1016/j.matpur.2020.07.006>
- 2020 *On the number of isolated eigenvalues of a pair of particles on the half-line*, Operators and Matrices 14, 712–722
- 2020 *Impact of surface defects on a condensate of electron pairs in a quantum wire*, Theoretical and Mathematical Physics 203, 691–699
- 2019 *Discrete spectrum of Schrödinger operators with potentials concentrated near conical surfaces*, in collaboration with S. Egger and K. Pankrashkin, Letters in Mathematical Physics, <https://doi.org/10.1007/s11005-019-01246-z>
- 2019 *On bound electron pairs on the half-line*, Reports on Mathematical Physics 83, 129-138
- 2019 *Bose-Einstein condensation in the Luttinger–Sy model with contact interaction*, in collaboration with M. Pechmann and W. Spitzer, Annales Henri Poincaré, <https://doi.org/10.1007/s00023-019-00771-w>
- 2019 *On Bose-Einstein condensation in the Luttinger-Sy model with finite interaction strength*, in collaboration with M. Pechmann and W. Spitzer, Journal of Statistical Physics, <https://doi.org/10.1007/s10955-019-02240-4>
- 2019 *A remark on the effect of random singular two-particle interactions*, Archiv der Mathematik, <https://doi.org/10.1007/s00013-018-1292-8>
- 2019 *On Lennard-Jones-type potentials on the half-line*, in collaboration with F. Gregorio, Archiv der Mathematik 112, no. 1, 101-111
- 2018 *On the numerical range with respect to a family of projections*, in collaboration with W. Dada and N. Erkurşun, Methods Funct. Anal. Topology 24, no. 4, 297-304

- 2018 *On pairs of interacting electrons in a quantum wire*, Journal of Mathematical Physics 59, 063504
- 2017 *Scattering properties of two singularly interacting particles on the half-line*, in collaboration with S. Egger, Reviews in Mathematical Physics 29, 1750032
- 2017 *On a two-particle bound system on the half-line*, in collaboration with T. Mühlenbruch, Reports on Mathematical Physics 80, 143-151
- 2016 *Instability of Bose-Einstein condensation into the one-particle ground state on quantum graphs under repulsive perturbations*, in collaboration with J. Bolte, Journal of Mathematical Physics 57, 043301
- 2016 *Two interacting particles on the half-line*, in collaboration with T. Mühlenbruch, Journal of Mathematical Physics 57, 023509
- 2014 *Many-particle quantum graphs and Bose-Einstein condensation*, in collaboration with J. Bolte, Journal of Mathematical Physics 55, 061901
- 2013 *Quantum graphs with two-particle contact interactions*, in collaboration with J. Bolte, Journal of Physics A: Mathematical and Theoretical, 46, 045207
- 2013 *Quantum graphs with singular two-particle interactions*, in collaboration with J. Bolte, Journal of Physics A: Mathematical and Theoretical, 46, 045206