

LIST OF PUBLICATIONS OF JOHANNA MICHOR

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RESEARCH MONOGRAPH

- (1) F. Gesztesy, H. Holden, J. Michor, and G. Teschl, *Soliton Equations and Their Algebraic-Geometric Solutions. Volume II: (1+1)-Dimensional Discrete Models*, Cambridge Studies in Advanced Mathematics, Volume **114**, Cambridge University Press, Cambridge, 2008, 450 pages. ISBN 978-0-521-75308-1

PUBLICATIONS IN REFEREED JOURNALS AND PROCEEDINGS

- (2) “Reconstructing Jacobi matrices from three spectra”, with G. Teschl, in “Spectral Methods for Operators of Mathematical Physics”, J. Janas, P. Kurasov, and S. Naboko (eds.), 151–154, *Oper. Theory Adv. Appl.* **154**, Birkhäuser, Basel, 2004.
- (3) “Scattering theory for Jacobi operators with quasi-periodic background”, with I. Egorova and G. Teschl, *Comm. Math. Phys.* **264-3**, 811–842 (2006).
<https://doi.org/10.1007/s00220-006-1518-7>
- (4) “Trace formulas for Jacobi operators in connection with scattering theory for quasi-periodic background”, with G. Teschl, in “Operator Theory, Analysis, and Mathematical Physics”, J. Janas, et al. (eds.), 69–76, *Oper. Theory Adv. Appl.* **174**, Birkhäuser, Basel, 2007. https://doi.org/10.1007/978-3-7643-8135-6_6
- (5) “Inverse scattering transform for the Toda hierarchy with quasi-periodic background”, with I. Egorova and G. Teschl, *Proc. Amer. Math. Soc.* **135**, 1817–1827 (2007).
<https://doi.org/10.1090/S0002-9939-06-08668-0>
- (6) “Scattering theory for Jacobi operators with a steplike quasi-periodic background”, with I. Egorova and G. Teschl, *Inverse Problems* **23**, 905–918 (2007).
<https://doi.org/10.1088/0266-5611/23/3/004>
- (7) “Algebraic-geometric finite-band solutions of the Ablowitz–Ladik hierarchy”, with F. Gesztesy, H. Holden, and G. Teschl, *Int. Math. Res. Notices* **2007**, no. 20, Art. ID rnm082, 55 pp (2007). <https://doi.org/10.1093/imrn/rnm082>

- (8) “The Ablowitz–Ladik hierarchy revisited”, with F. Gesztesy, H. Holden, and G. Teschl, in “Methods of Spectral Analysis in Mathematical Physics”, J. Janas et al. (eds.), 139–190, *Oper. Theory Adv. Appl.* **186**, Birkhäuser, Basel, 2008.
- (9) “Scattering theory for Jacobi operators with general steplike quasi-periodic background”, with I. Egorova and G. Teschl, *Zh. Mat. Fiz. Anal. Geom.* **4-1**, 33–62 (2008).
- (10) “Local conservation laws and the Hamiltonian formalism for the Ablowitz–Ladik hierarchy”, with F. Gesztesy, H. Holden, and G. Teschl, *Stud. Appl. Math.* **120-4**, 361–423 (2008). <https://doi.org/10.1111/j.1467-9590.2008.00405.x>
- (11) “Soliton solutions of the Toda hierarchy on quasi-periodic backgrounds revisited”, with I. Egorova and G. Teschl, *Math. Nach.* **282-4**, 526–539 (2009).
- (12) “On the equivalence of different Lax pairs for the Kac–van Moerbeke hierarchy”, with G. Teschl, in “Modern Analysis and Applications”, V. Adamyan (ed.) et al, 437–445, *Oper. Theory Adv. Appl.* **191**, Birkhäuser, Basel, 2009. https://doi.org/10.1007/978-3-7643-9921-4_27
- (13) “Inverse scattering transform for the Toda hierarchy with steplike finite-gap backgrounds”, with I. Egorova and G. Teschl, *J. Math. Physics* **50**, 103522 (2009). <https://doi.org/10.1063/1.3239507>
- (14) “The algebro-geometric initial value problem for the Ablowitz–Ladik hierarchy”, with F. Gesztesy, H. Holden, and G. Teschl, *Discrete Contin. Dyn. Syst.* **26-1**, 151–196 (2010). <https://doi.org/10.3934/dcds.2010.26.151>
- (15) “On the spatial asymptotics of solutions of the Ablowitz–Ladik hierarchy”, *Proc. Amer. Math. Soc.* **138**, 4249–4258 (2010). <https://doi.org/10.1090/S0002-9939-2010-10595-6>
- (16) “Scattering theory with finite-gap backgrounds: transformation operator and characteristic properties of scattering data”, with I. Egorova and G. Teschl, *Math. Phys., Anal. and Geom.* **16**, 111–136 (2013). <https://doi.org/10.1007/s11040-012-9121-y>
- (17) “Wave phenomena of the Toda lattice with steplike initial data”, *Physics Letters A* **380**, 1110–1116 (2016). <https://doi.org/10.1016/j.physleta.2016.01.033>
- (18) “Rarefaction waves for the Toda equation via nonlinear steepest descent”, with I. Egorova and G. Teschl, *Discrete Contin. Dyn. Syst.* **38-4** (2018). <https://dx.doi.org/10.3934/dcds.2018081>

- (19) “Long-time asymptotics for the Toda shock problem: non-overlapping spectra”, with I. Egorova and G. Teschl, *Zh. Mat. Fiz. Anal. Geom.* **14-4**, 406-451 (2018). <https://doi.org/10.15407/mag14.04.406>
- (20) “GBDT and algebro-geometric approaches to explicit solutions and wave functions for nonlocal NLS”, with A.L. Sakhnovich, *J. Phys. A: Math. Theor.* **52**, 025201 (2019). <https://doi.org/10.1088/1751-8121/aaedeb>
- (21) “How discrete spectrum and resonances influence the asymptotics of the Toda shock wave“, with I. Egorova, *SIGMA* **17** (2021), 045, 32 pages. <https://doi.org/10.3842/SIGMA.2021.045>
- (22) “Soliton asymptotics for KdV shock waves via classical inverse scattering“, with I. Egorova and G. Teschl, *J. Math. Anal. Appl.* (to appear). <https://doi.org/10.1016/j.jmaa.2022.126251>
- (23) “Soliton asymptotics for the KdV shock problem of low regularity“, with I. Egorova and G. Teschl, in ”From Complex Analysis to Operator Theory: A Panorama In Memory of Sergey Naboko“, M. Brown (ed.) et al., *Oper. Theory Adv. Appl.*, Birkher, Basel (to appear). <http://arxiv.org/abs/2202.08507>

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- (24) “Long-time asymptotics for Toda shock waves in the modulation region“, with I. Egorova, A. Pryimak, and G. Teschl, Preprint (2020). <https://arxiv.org/abs/2001.05184>

THESES

- (i) *Trace formulas and inverse spectral theory for finite Jacobi operators*, Diploma thesis, University of Vienna, 2002
<http://www.mat.univie.ac.at/~jmichor/ftp/theses/michordiplom.pdf>
- (ii) *Scattering theory for Jacobi operators and applications to completely integrable systems*, Doctoral thesis, University of Vienna, 2005
<http://www.mat.univie.ac.at/~jmichor/ftp/theses/michordiss.pdf>
- (iii) *Algebro-geometric solutions and their perturbations*, Habilitationsschrift, University of Vienna, 2012
<http://www.mat.univie.ac.at/~jmichor/ftp/theses/michorhabil.pdf>

A complete list of publications and pdf-files of all articles are available at <http://www.mat.univie.ac.at/~jmichor/ftp>.

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