

CURRICULUM VITAE, MATEI MACHEDON

1. EDUCATIONAL BACKGROUND

B.A./M.S., University of Chicago, 1982
Ph.D., Princeton University, 1986. Advisor: Charles Fefferman

2. EMPLOYMENT BACKGROUND

Prof., University of Maryland, 1998-
Assoc.Prof., University of Maryland, 1994-98
Member, Institute for Advanced Study, Princeton, NJ, 1994-95
Asst.Prof., Princeton University, 1988-94
C.L.E.Moore Instructor/NSF Postdoc, MIT, 1986-88

3. ARTICLES IN REFEREED JOURNALS

1. Estimates for the parametrix of the Kohn Laplacian on certain domains, *Invent. Math.* 91, 339-364 (1988)
2. Szego kernels on pseudoconvex domains with one degenerate eigenvalue, *Annals of Math*, 128, 619-640 (1988)
3. with C.L. Fefferman, J.J.Kohn, Holder estimates on CR manifolds with a diagonalizable Levi form, *Advances in Math*, 84, no.1, 1-90, (1990)
4. with S. Klainerman, Space-time estimates for null forms and the local existence theorem, *Comm. Pure Appl. Math*, vol XLVI, 1221-1268 (1993)
5. with S. Klainerman, On the Maxwell-Klein-Gordon equation with finite energy, *Duke Math Journal*, vol. 74, no. 1, 19-44, (1994)
6. with S. Klainerman, Finite energy solutions of the Yang-Mills equations in \mathbf{R}^{3+1} , *Annals of Math.* 142, 39-119 (1995)
7. with S. Klainerman, Smoothing estimates for null forms and applications, *Duke Math Journal*, 81, no 1, in celebration of John Nash, 99-133 (1996)
8. with S. Klainerman, with appendices by J. Bourgain and D. Tataru, Remark on the Strichartz inequality, *International Math Research Notices* no 5, 201-220 (1996).
9. with S. Klainerman, Estimates for null forms and the spaces $H_{s,\delta}$ *International Math Research Notices* no 17, 853-865 (1996).

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10. with S. Klainerman, On the regularity properties of a model problem related to wave maps *Duke Math Journal*, vol. 87, no 3, 553-589, (1997)
11. with S. Klainerman, On the optimal local regularity for gauge field theories, *Differential and Integral Equations*, vol 10, no 6, 1997, pp 1019-1030
12. with S. Klainerman, On the algebraic properties of the $H_{n/2,1/2}$ spaces, *International Math Research Letters*, no 15, 1998 pp 765-774
13. with J. Sterbenz, Almost optimal local well-posedness for the 3+1 dimensional Maxwell-Klein-Gordon equations, *Journal of the AMS*, Vol. 17, no 2, (2004), pp 297-359
14. With S. Klainerman, On the uniqueness of solutions to the Gross-Pitaevskii hierarchy, *Communications in Mathematical Physics* 279, 169-185, (2008)
15. With M. Grillakis, D. Margetis, Second order corrections to mean field evolution of weakly interacting bosons, I, *Communications in Mathematical Physics*, 294, 273-301 (2010)
16. With M. Grillakis, D. Margetis, Second order corrections to mean field evolution of weakly interacting bosons, II, *Advances in Mathematics* Volume 228, Issue 3, (2011), p. 1788-1815
17. With M. Grillakis. Pair excitations and the mean field approximation of interacting bosons, I, *Communications in Mathematical Physics* 2013, 324, Issue 2, pp 601-636 (2013)
18. With M. Grillakis. Beyond mean field: on the role of pair excitations in the evolution of condensates, *Journal of Fixed Point Theory and Applications: Volume 14, Issue 1* (2014), 91-111 (Festschrift Volume in honor of Y. Choquet-Bruhat's 90th birthday)
19. With M. Grillakis, Pair excitations and the mean field approximation of interacting bosons, II, *Communications in PDE*, Vol 42, No 1, 24-67 (2017)
20. With M. Grillakis, Uniform in N estimates for a Bosonic system of Hartree-Fock-Bogoliubov type, *Communications in PDE*, Vol 44, No 12, 1431-1465 (2019)
21. With X. Du, Counterexamples to L^p collapsing estimates, *Illinois Journal of Mathematics*, Vol. 65, No. 1 (2021), 191-200
22. With J. Chong, M. Grillakis, Z. Zhao, Global estimates for the Hartree-Fock-Bogoliubov equations. *Communications in PDE*, Volume 46, Issue 10, 2015-2055 (2021)

4. RECENT CONFERENCE TALKS

Quantum Many-Body Dynamics: Analysis and Modeling SIAM mini-conference, Philadelphia, (20 minute mini-talk), August 2016

Texas Analysis and Mathematical Physics conference, Austin, (50 minute talk), November 2017

Nonlinear evolution equations of quantum physics at the AMS Meeting in San Diego, (20 minute talk), January 2018

Many-body theory, effective equations and PDEs, Mittag-Leffler Institute, (50 minute talk), March 2019

5. DEPARTMENT SERVICE

Associate Chair for Faculty Affairs, July 2010–July 2013

Associate Chair for Graduate Studies, July 2016–July 2018

6. FELLOWSHIPS, PRIZES, AND AWARDS

Paul R. Cohen (undergraduate) prize, University of Chicago, 1982 (shared with Chris Sogge)

Alfred P. Sloan Doctoral Dissertation Fellowship, 1985–86

NSF Postdoc. Fellowship, 1986–88

Alfred P. Sloan Fellowship, 1989–1991

Presidential Young Investigator, 1990–95

ICM speaker, Berlin, 1998

7. EDITORSHIPS

Associate Editor, Duke Math Journal 1992–2000