

Curriculum vitæ

Charles L. Epstein
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1. GENERAL INFORMATION

Permanent address: University of Pennsylvania
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2. ACADEMIC POSITIONS

1983-86 Instructor and NSF postdoctoral fellow, Department of Mathematics
Princeton University
1985-89 Assistant Professor, Department of Mathematics
University of Pennsylvania
1989-93 Associate Professor, Department of Mathematics
University of Pennsylvania
1993- Professor, Department of Mathematics
University of Pennsylvania
2001- Member, Graduate group in Bioengineering
University of Pennsylvania
2002- Francis J. Carey Term Professor of Mathematics
University of Pennsylvania

3. TEMPORARY POSITIONS

June 1985 Member of S.F.B. 170, Math. Inst., Göttingen, Germany
Spring 1986 Member of M.S.R.I., Berkeley, CA
1989-90 Visiting Scholar, Department of Mathematics, MIT
June 1990 Member of S.F.B. 170, Math. Inst., Göttingen, Germany
1991-5 Associate Editor, Bulletin of the A.M.S.
1994-5 Member of I.H.E.S., Bures-sur-Yvette, France.
February 1995 Member of S.F.B. 170, Math. Inst., Göttingen, Germany
June, 1995 Visitor, Forschungsinstitut für Mathematik ETH, Zürich.
November, 1995 Member of M.S.R.I., Berkeley.
May, 1996 Visiting Lecturer, Inst. für Mathematik Univ. Bern.
May, 1997 Visiting Prof., University of Paris, VI.
October, 1997 Visiting Member, Fields Institute, Toronto.
June, 1999 Visiting Prof., University of Paris, VI.
July, 1999 Visiting Prof., C.I.R.M., Marseilles.
January, 2001- External Editor, J. Inst. Math. Jussieu. (JIMJ)

4. AWARDS AND FELLOWSHIPS

1983	K. O. Friedrichs prize for an excellent thesis
1983–86	NSF postdoctoral fellowship
July 1986	NSF Grant DMS86–00338
July 1987	NSF Grant DMS85–03302
July 1988–June 1990	Alfred P. Sloan research fellowship
July 1988–June 1990	Investigator, NSF Grant DMS87–22998
July 1988–June 1991	Young Faculty Award, Natural Science Association University of Pennsylvania
July 1990–June 1993	Principal investigator, NSF Grant DMS90–01957
July 1993–June 1996	Principal investigator, NSF Grant DMS93–01088
July 1996–June 1999	Principal investigator, NSF Grant DMS96–23040
July 1999–June 2002	Principal investigator, NSF Grant DMS99–70487

5. SOCIETY MEMBERSHIPS

MIT chapters of $\phi\beta\kappa$ and $\Sigma\Xi$

SIAM

AAAS

6. PUBLICATIONS

- 1 Charles L. Epstein, *Research announcement of Spectral theory of geometrically periodic hyperbolic three manifolds*, C. R. Acad. Sc. Paris Serie I 300(1985), pages 431–434.
- 2 —, James Lee Hafner and Peter Sarnak, *Zeros of L-functions attached to Maass forms*, Math. Zeit., 190(1985), pages 113–128.
- 3 —, *The spectral theory of geometrically periodic hyperbolic 3-manifolds*, Memoirs of the American Mathematical Society, no. 335 58(1985), pages 1–161.
- 4 —, *Incoming and outgoing waves*, J. of Diff. Eq., 60(1985), pages 337–362.
- 5 —, *Orthogonally integrable line fields*, Comm. in Pure and Applied Math., 1985(38), pages 599–608.
- 6 —, *Visibility of the Martin Boundary for quasiconformal metrics on D_1* , Contemporary Mathematics, 1986(51), pages 45–50.
- 7 —, *The hyperbolic Gauss map and quasiconformal reflections*, J. reine angew. Math., 1986(372), pages 96–135.
- 8 —, *The asymptotic boundary of a surface imbedded in \mathbb{H}^3* , Michigan Math. J., 1987(34), pages 227–239.
- 9 — and M. I. Weinstein, *A stable manifold theorem for the curve shortening equation*, Comm. Pure and Applied Math., 1987(40), pages 119–139.
- 10 — and Michael Gage, *The curve shortening flow*, in Math. Sci. Research Inst. Publications, Wave Motion, Theory and Modeling, 1987 pages 15–59.
- 11 —, *Univalence criteria and surfaces in hyperbolic space*, J. reine angew. Math., 1987(380), pages 196–214.

- 12 —, *Asymptotics for closed geodesics in a homology class, the finite volume case*, Duke Math. J., 1987(55), pages 717–757.
- 13 — and D. M. Burns Jr. , *A global invariant for three dimensional CR-manifolds*, Invent. math., 1988(92), pages 333–348.
- 14 —, *Positive harmonic functions on Abelian covers*, J. of Funct. Anal., 1989(82), pages 303–315.
- 15 — and D. M. Burns Jr. , *Characteristic numbers of bounded domains*, Acta Math., 1990(164), pages 29–71.
- 16 —, Troels Jorgensen and Curt McMullen, *Multiple intersections on negatively curved surfaces*, J. Diff Geo., 33(1991), pages 253–261.
- 17 —, R. B. Melrose and Gerardo Mendoza, *Resolvent of the Laplacian on strictly pseudoconvex domains*, Acta Math. , 167(1991), pages 1–106.
- 18 — and D. M. Burns, Jr., *Embeddability for three dimensional CR-manifolds*, Jour. of A. M. S., 3(1991), pages 809–841.
- 19 — and R.B. Melrose, *Shrinking tubes and the $\bar{\partial}$ -Neumann problem*, 1990, book ms, pages 1–250.
- 20 —, *Some explicit trace formulæ* , Advanced Studies in Pure Mathematics, Zeta Functions in Geometry, 21(1992), pages 127–140.
- 21 —, *CR-structures on three dimensional circle bundles*, Inv. Math. 1992(109), pages 351–403.
- 22 — and Bruce Kleiner, *Spherical means in annular regions*, C.P.A.M., 44(1993), pages 441–451.
- 23 — and John Bland, *Embeddable CR-structures and Deformations of Pseudoconvex Surfaces, part 1: Formal Deformations*, Jour. of Alg. Geo., 5(1996), pages 277–368.
- 24 — and John Bland, *Embeddable CR-structures and Deformations of Pseudoconvex Surfaces*, AMS/IP Studies in Advanced Mathematics, 5(1997), pages 1–27.
- 25 —, *A relative index for embeddable CR-structures, I*, Annals of Math., 147(1998), pages 1–59.
- 26 —, *A relative index for embeddable CR-structures, II*, Annals of Math., 147(1998), pages 61–91.
- 27 —, *Appendix A to “Divisor of the Selberg Zeta Function for Kleinian Groups, I. Even Dimensions” by S.J. Patterson and Peter A. Perry*, Duke Journal, 106(2001), pages 370–379.
- 28 —, *Deformations of singularities, complex manifolds and CR-structures*, in Advanced Studies in Pure Mathematics, CR-Geometry and Overdetermined Systems., Math. Soc. of Japan, 25(1997), pages 85–109.
- 29 — and Gennadi Henkin, *Extension of CR-structures for three-dimensional pseudoconcave manifolds*, Contemporary Mathematics, 205(1997), pages 51–67.
- 30 — and Gennadi Henkin, *Stability of embeddings for pseudoconcave surfaces and their boundaries*, Acta Math., 185(2000), pages 161–2–37.
- 31 — and R.B. Melrose, *Contact degree and the Index of Fourier Integral Operators*, MRL, 5(1998), pages 363–381.
- 32 — and G. Henkin, *Two Lemmas in Local Analytic Geometry*, Contemporary Mathematics, 251(2000), pages 189–195.

- 33 — and G. Henkin, *Embeddings for 3-dimensional CR-manifolds*, Progress in Mathematics, 188(2000) Birkhäuser Verlag, pages 223–236.
- 34 — and R.B. Melrose, *The Heisenberg algebra, index theory and homology*, book ms, 2001, pages 1–300.
- 35 — and Yong Ouyang, *Deformations of open Stein manifolds*, Comm. in PDE, 25(2000), pages 2333–2351.
- 36 — and Gennadi Henkin, *Can a good manifold come to a bad end?*, to appear in Proceedings of the Steklov Inst., 2001, 23 pages.
- 37 —, *The Mathematics of Medical Imaging*, to appear Prentice Hall 2001, 654 pages.
- 38 —, *Geometric bounds on the relative index*, to appear JIMJ, 2002, 22 pages.