

PERRIN S. MEYER

Curriculum Vitae

Program for the Human Environment
The Rockefeller University
1230 York Ave, Box 234
New York, NY, 10065
Phone: (212) 327-7842, Fax: (212) 327-7519
email: perrinmeyer_at_yahoo_dot_com
<http://phe.rockefeller.edu/perrin/>

AREAS OF INTEREST

Mathematical analysis of growth and diffusion phenomena, industrial ecology and environmental science, nonlinear modeling and fractal geometry, computational acoustics and wave propagation, numerical and computer methods for mathematical modeling on parallel computers.

RESEARCH EXPERIENCE

Research Assistant, June 1993 - present.

Program for the Human Environment, The Rockefeller University, New York, NY.

Research on the mathematical analysis, decomposition, and prediction of complex growth and diffusion phenomena. Computer-based analysis of historical time-series data on topics including: environmental and industrial technologies, energy and materials production and consumption, transport, world demographics and fertility.

Director of Digital Research, August 2001 - present.

Meyer Sound Laboratories Inc., Berkeley, CA

I perform research in all areas of computational acoustics. I am investigating innovative algorithms for multi-channel audio processing. I am also involved in research to improve our ability to model the complete physical behavior of loudspeakers.

NSF Young Scientist Summer Program, Summer 1995.

International Institute for Applied Systems Analysis, Laxenburg, Austria.

Research with the Environmentally Compatible Energy Strategies group on technological substitution models and Lotka-Volterra dynamical systems.

NSF Research Experience for Undergraduates, Summer 1991.

National Nanofabrication Facility, Cornell University, Ithaca, NY.

Research on high-energy ion-induced grain growth in Palladium thin films, with Dr. D. Lilienfeld. Activities included sample preparation, ion accelerator and transmission electron microscope operation, PC based image analysis, data collection, and statistical analysis of grain distributions.

Research Assistant, Summer 1990, 1992.

Meyer Sound Laboratories, Berkeley, CA.

Research on the arrayability of small high-powered speaker arrays using FFT based signal analysis. Research on computer controlled networks for professional audio applications.

PUBLICATIONS

[On the naturally induced sources for obstacle scattering,](#)

P. S. Meyer, M. Capistran and Y. Chen,
Commun. Comput. Phys 1(6):974-983, 2006.

Comparison of the Directional Point Source Model and BEM Model for Arrayed Loudspeakers,

P. Meyer and R. Schwenke, Proceedings of the Institute of Acoustics (UK) Volume 25 Part 4 (Reproduced Sound 19, Oxford, 6-8 November 2003).

Toward Green Mobility: The Evolution of Transport,

Jesse H. Ausubel, Cesare Marchetti, Perrin S. Meyer,
European Review 6(2):143-162, 1998.

A Primer on Logistic Growth and Substitution: The Mathematics of the Loglet Lab Software,

Perrin S. Meyer, Jason W. Yung, and Jesse H. Ausubel,
Technological Forecasting and Social Change 61(3):247-271, 1999.

The Loglet Lab Software: A Tutorial,

Jason W. Yung, Perrin S. Meyer, and Jesse H. Ausubel,
Technological Forecasting and Social Change 61(3):273-295, 1999.

Carrying Capacity: A Model with Logistically Varying Limits,

Perrin S. Meyer and Jesse H. Ausubel,
Technological Forecasting and Social Change 61(3):209-214, 1999.

Human Population Dynamics Revisited with the Logistic Model: How Much Can Be Modeled and Predicted?,

Cesare Marchetti, Perrin S. Meyer, Jesse H. Ausubel,
Technological Forecasting and Social Change 52:1-30, 1996.

Death and the Human Environment: The United States in the 20th Century.

Jesse H. Ausubel, Perrin S. Meyer, and Iddo K. Wernick
Technology and Society 23(2):131-146 (2001).

Bi-logistic Growth,

Technological Forecasting and Social Change 47:89-102, 1994.

Graphical Representations of World Population Growth,

Perrin S. Meyer, Jesse H. Ausubel,
Human Dimensions Quarterly 2:17-19, 1994.

Ion Induced Grain Growth in Pd Thin Films,

David A. Lilienfeld, P. Borgesen, Perrin S. Meyer,
Mat. Res. Soc. Symp. Proc. 235:571-6, 1992.

Computer Protocols and Monitoring for Audio Systems,

Mix Magazine, pp. 168-179, October 1992.

Book Review

Growth and Diffusion Phenomena: Mathematical Frameworks and Applications, by Robert B. Banks,
Technological Forecasting and Social Change 51(1):107-108, 1996.

SOFTWARE

Loglet Lab

<http://phe.rockefeller.edu/LogletLab/>

A software package for analyzing logistic behavior in time-series data, programmed in C and written for 32-bit Microsoft Windows OS.

PRESENTATIONS AT CONFERENCES, SYMPOSIUMS

Institute of Acoustics (UK) Reproduced Sound 16, November 2000, Stratford-upon-Avon, UK,
Talk entitled "[Multi Acoustic Prediction Program \(MAPP\(tm\)\) - Recent Results.](#)"

Audio Engineering Society Annual Convention, May 1998, Amsterdam,
Talk entitled "Finite-Difference Methods for Parallel Computational Linear Acoustics."

World Future Society Annual Convention, July 1997, San Francisco.
Talk entitled "Toward Green Mobility: The Evolution of Transport."

EDUCATION

Master's of Science in Scientific Computing, May 2001.

Courant Institute of Mathematical Sciences, New York University, New York, NY.

Master's Thesis topic: numerical methods for parallel computational linear acoustics on clusters of Linux workstations.

Master's Thesis title: "[Axisymmetric Acoustic Scattering By Interpolation.](#)"

Course work in numerical methods for linear algebra and partial differential equations, scientific computing on parallel supercomputers, nonlinear wave propagation, fluid dynamics.

Summer Graduate Program in Acoustics, June 1998.

Pennsylvania State University, State College, PA.

Intensive 2-week course on Computational Acoustics with Prof. Victor Sparrow. Studied Finite Difference, Finite Element, and Boundary Element methods for linear computational acoustics using software packages MatLab, Mathematica, and SYSNOISE.

Complex Systems Summer School, June 1996.

Santa Fe Institute, Santa Fe, NM.

Four weeks of lectures and projects on complex systems including nonlinear dynamical systems (used to model HIV infection), agent-based "artificial life" modeling, and agent-based models of highway traffic.

Bachelor of Science, Applied Physics, May 1993, Columbia University, New York, NY.

Senior thesis: "[Fractal Dimension of Music.](#)" Course work in physics (statistical, quantum, Lagrangian mechanics), computer science (C, Pascal), applied mathematics (linear algebra, nonlinear dynamics, fractal geometry, ODE's and PDE's), electrical engineering (digital signal processing, circuit analysis), statistics (nonlinear regression, model fitting and validation).

MEMBERSHIPS

American Acoustical Society, American Association for the Advancement of Science, Audio Engineering Society, New York Academy of Sciences, Society for Industrial and Applied Mathematics.

Advisory Board, Ensemble Studio Theater Sloan Science Project, (New York, NY).

COMPUTER SKILLS

Numerical algorithms for linear algebra, ordinary differential equations, partial differential equations, data analysis, nonlinear regression, Monte-Carlo methods in: C, Matlab, and Mathematica. Parallel computing using MPI and PVM on SGI Origin and Linux Beowulf clusters. Knowledge of Internet protocols: HTML, HTTP, FTP, etc.. Operating Systems: Unix (Linux, SunOS, Solaris, SGI IRIX), MS-DOS, MS-Windows. Scientific Graphics: SigmaPlot, PowerPoint. Information Databases: MathSci, Medline, ISI SciSearch, DIALOG.

last modified in February 2007