Curriculum Vitae

HOLCMAN David

Date of birth	October 22, 1970
Nationality	French
Mail. Address	UCSF, Keck Center, dept. of Physiology, HSW800, 513 Parnassus AVE, 94143-0444 San Francisco, California USA
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- **Habilitation in mathematics**, Paris VI, France 2001
- **Ph.D. in Mathematics**, Paris VI, 1998. Ph.D. adviser: T. Aubin
- **Present position**: Senior Scientist, Weizmann Institute of Science, Rehovot Israel. Visiting researcher at UCSF in Keck center for Theoretical Neurobiology

Research Interests

- Differential Geometry and Partial Differential Equations
- Noise analysis, dynamical systems
- Theory of chemical reactions in non equilibrium biological systems
- Modeling neurobiological systems, microstructures like synapses, sensor cells

Professional activities

2002-2003 **A-Sloan Fellow, UCSF-Physiology & UC-Berkeley-Mathematics**
Research area: noise in photoreceptors, model of nonequilibrium chemical reactions
-Theory of singular perturbation in PDE, role of dynamical systems
B-Senior Scientist, Weizmann Institute of Science, department of Mathematics and Computer Science

2000-2002 **Postdoc, Weizmann Institute of Science, Rehovot, Israel**
Supported by the Feinberg Graduate School. Research in singular perturbations and nonlinear statistical physics, with applications in modeling neurobiology microstructures
Research area: dynamical systems, control theory and Sub-riemannian Geometry

1999-2000 **Postdoc, Scuola Normale Superiore di Pisa, Italy**
European financial support (Sept 99-March 2000)
Research area: Differential Geometry and Dynamical Systems

1998-1999 **A.T.E.R.** (Lecturer Position) **Paris VI University Paris, France**
-Research: nonlinear PDE, Dynamical Systems and differential Geometry
-Teaching activity : 6hrs per week during 2 semesters

Undergraduate Experiences

1996 June-Sept. — **University of California at Berkeley, Dept. of Molecular and Cell Biology, Berkeley, USA**
Research on multi-channels and Conditional Stimuli analysis in W. Freeman's lab

1994 (6 months) — **Universidad de los ANDES, Bogota, Colombia**
-Research on multiscale analysis and stages classification using wavelets, EEG analysis
-Teaching practical electronics at the undergraduate level

1993 — **C.N.R.S. (National Scientific Research Center) Orléans, France**
Plasma Physics and Chemical Environment Laboratory. Junior research training
Research: collective phenomena in plasmas -Theoretical study of 4 interacting waves. Transitions to chaos

National Military Service

1995 — **C.E.A. (French Atomic Agency) Center CESTA, Bordeaux, France**
Research on modeling Plasma Opening Switch

Teaching Experience

1998-99 — A.T.E.R. (lecturer position at Paris VI)
Teaching load: 2 semesters, 6 hrs/week, at the undergraduate level

1996-98 — Teaching assistant at Paris VI. Teaching Load: 64 hrs/year

1995 — Teaching for preparation of the exam for engineering schools: 3 hrs/week, Paris

1994 — Teaching assistant in experimental electronic. Universidad de Los Andes, Bogota, Colombia. 8 hrs/week for one semester

Grants and Awards

2002-2004 — SLOAN foundation (2 years)

2000-2001 — Feinberg Graduated school fellowship (2 years)

1999 — European community (Pisa, Italy) fellowship

1996-1998 — University of Paris VI fellowship

1994 — Bogota university (Bogota,Colombia) fellowship

1992-1994 — ENS Telecom fellowship

1993 — CNRS fellowship (3 months)

Company Experience

1996-1998 — Technical manager in a start-up compagny XL-com. The compagny was designing WEB sites for medical applications oriented in psychiatry. Role: I elaborated WEB sites and gave advises for the orientation of the group.

Titles

1- Ph.D. of University of Paris VI (Pierre et Marie Curie University)
2- Ecole Normale Supérieure de Cachan, Ancient élève
3- French Engineering School. "Ecole Nationale supérieure des Télécommunications", graduated in 1994

Education

2001	**Habilitation thesis,** July 6th, Pierre & Marie Curie University, Paris, France Qualified for Associate Professor positions in France
1996-1998	**PhD in Mathematics,** Pierre & Marie Curie University - Research: Nonlinear Analysis on Manifolds and Partial Differential Equations PhD defense : June 5th 1998, passed with high distinction. Adviser T. Aubin -Teaching assistant
1991-1994	**-Telecom Engineering school** (Ecole Nationale Supérieure des Télécoms) Engineering Specialization : electrical engineering, image processing, signal analysis, vision, bio-engineering **- Paris VI University**, Bachelor in Mathematics **-Ecole Normale Supérieure at Cachan**: Master in Mathematics: Differential Geometry, Analysis, PDE
1989-1991	Preparation for competitive engineering school exams "Mathématiques Supérieures et Spéciales" Charlemagne-Paris
1988	High school diploma

Recent Scientific Collaborators

Neurobiology:
E. Korkotian, department of Neurobiology, Weizmann Institute of Science, Israel
J. Korenbrot, K. Miller, dpt. of Physiology, UCSF, USA

Mathematics:
Z. Schuss, dpt. of Applied Math., Tel Aviv University, Israel
I. Kupka, dpt. of Math., University of Paris VI, France
C. Pugh, dpt. of Math., UC- Berkeley, USA

Invitations for short periods

- University of Paris VI, dpt. of Pure Mathematics, 2 weeks, June 2003
- Tel Aviv Universtity and Weizmann Institute of Science 2, weeks, June 2003
- Rutgers University, dpt. of Mathematics, 1 week, Feb 2003
- Indiana Universty, dpt. of Mathematics, 4 days, Feb 2003
- Rush Medical Center, Chicago. Dpt. of Biophysics, 1 month, Oct 2002
- Tel-Aviv, dpt. of Applied Mathematics, 1 month, March 2002
- SNS-Scuola Normale Superior di Pisa, Italy, dpt. of Mathematics, July-September 2001
- Weizmann Institute of Science, Rehovot, Israel, Plasma Physic, July-September 1998

Invited Talks

- UCSD, Pure Mathematics, Seminar 07/03
- Weizmann Institute of Science, Pure Mathematics, Seminar 06/03
- MSRI &Berkeley University Symposium on the Semi-classic approximation, Seminar 04/03
- Berkeley University Pure Mathematics, Seminar 03/03
- Indiana University Pure Mathematics, Seminar 02/03
- Rutgers University Statistical Physics, Seminar 02/03
- Rutgers University Pure Mathematics , Seminar 02/03
- Princeton University Pure Mathematics, Seminar 02/03

- Rochester University Pure Mathematics, Seminar 02/03
- Stanford University Applied Mathematics, Seminar 01/03
- Stanford University Pure Mathematics, Seminar 10/01
- Weizmann Institute of Science Applied and Pure Mathematics, Seminar 02-00, 10-01, 01-02
- Hebrew University of Jerusalem Pure Mathematics, Seminar 06-00
- Technion Institute of Science Pure Mathematics, Seminar 03-01
- University of Paris VI, France Pure Mathematics, Seminar, 02/03 - 03-97, 03-98, 03-99
- University of Florence, Italy Pure Mathematics Seminar 10-99
- University of Pisa, Italy Pure Mathematics, Seminar 10-99
- University of California, Berkeley Neurobiology, Seminar 08-96

Invited Conferences

- Geometric Analysis Conference, Pisa, Italy, Nov-2003
- Sloan meeting in Neurobiology, San Diego July 2003
- A.M.S. PDE-section, Colombia University, NYC, USA, Nov. 2000
- European Conference, Cortona Italy, 2000
- Israeli Congress of mathematics, PDE-section, Haifa, 2000

References

T. Aubin, dpt of Mathematics, University of Paris VI, Paris, France
I. Kupka, dpt. of Mathematics, University of Paris VI, Paris, France
C. Pugh, dpt. of Mathematics, Berkeley, California USA
K. Rubinstein, dpt. of Mathematics, Indiana University, USA
Z. Schuss, dpt. of Mathematics, TAU, Tel Aviv, Israel

E. Korkotian, dpt. of Neurobiology, Weizmann Institute, Rehovot, Israel
J. Korenbrot, dpt. of Physiology, UCSF, California, USA