

## CV (short version)

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## I. CURRICULUM VITAE

Born : yes

Place of birth : Québec, Canada

Nationality : Canadian

### I.A University Degrees

PERIOD	DEGREE	UNIVERSITY	SUBJECT
1970-1973	<b>B.Sc.</b>	<b>Université Laval</b> May 1973 (Québec, Canada)	Physics
1973-1974	<b>M.S.</b>	<b>Yale University</b> May 1974 (Connecticut, USA)	Theoretical Atomic Physics
1974-1978	<b>Ph.D.</b>	<b>Yale University</b> May 1978 (Connecticut, USA)	Theoretical Atomic Physics <sup>1</sup>
1979-1986	<b>Dr.rer.nat.habil.</b> <sup>2</sup>	<b>Universität Freiburg</b> May 1986 (Freiburg, Germany)	Theoretical Physics

<sup>1</sup> : Title of thesis : *Theory of Electron Molecule Interactions : Case Studies* under the supervision of prof. ARVID HERZENBERG

<sup>2</sup> : Exceptionally, the German doctorate (Dr.rer.nat.) was awarded together with the Habilitation (habil.), an academic degree beyond the Ph.D. that certifies excellence in teaching and research.

### I.B Scientific Career

PERIODE	POSITION	UNIVERSITY
May 1974 - Feb. 1978	<b>Research Assistant</b>	<b>Yale University</b> Department of Applied Science
March 1978 - Aug. 1979	<b>Research Associate</b>	<b>Oxford University</b> Theoretical Chemistry Department <b>Atomic Energy Establishment Harwell</b> Theoretical Physics Division
Sept. 1979 - Sept. 1983	<b>Wissenschaftlicher Angestellter</b>	<b>Universität Freiburg</b> Fakultät für Physik
Oct. 1983 - May 1986	<b>Hochschulassistent</b>	<b>Universität Freiburg</b> Fakultät für Physik

I.B *Scientific Career* (cont'd)

PERIODE	POSITION	UNIVERSITY
March 1986 - April 1986	<b>Professeur Associé</b>	<b>Université de Bordeaux I</b> Laboratoire des Collisions Atomiques
June 1986 - May 1990	<b>Professeur Agrégé</b>	<b>Université Laval</b> Département de Physique
Oct. 1992 - Sept. 1993	<b>Professeur des Universités</b> <i>(titulaire, 2ème classe)</i>	<b>Université de Bordeaux I</b> Unité de Formation et de Recherche (UFR) de Physique
Sept. 2001 - Aug. 2002	<b>Professeur Associé</b> <i>(full time)</i>	<b>Université Pierre et Marie Curie</b> Unité de Formation et de Recherche (UFR) de Physique
Sept. 2002 - Oct. 2008	<b>Professeur des Universités</b> <i>(titulaire, 1ère classe)</i>	<b>Université Pierre et Marie Curie</b> Unité de Formation et de Recherche (UFR) de Physique
Sept. 2009 - Mai 2011 Sept. 2014 - Dec. 2014	<b>Directeur des programmes de 2ième-3ième cycles</b>	<b>Université Laval</b> <b>Faculté des sciences et de génie</b> Département de Physique, de Génie Physique, et d'Optique
June 1990 -	<b>Professeur Titulaire *</b>	<b>Université Laval</b> Département de Physique, de Génie Physique, et d'Optique

\* Research Years (U. Laval) : Sept. 1992 – Aug. 1993 ; Sept. 1999 – Aug. 2000 ; Sept. 2008 – Aug. 2009 ; Sept. 2015 – Aug. 2016

Leave of Absence (U. Laval) : Sept. 2001 – Aug. 2003.

**II. RESEARCH INTERESTS**

(chronological from 1st to last publication in each field)

**1975-1981 Theory of electron-molecule collisions**

(shape and Feschbach resonances, vibrational and rotational excitation, e-polar molecules scattering)

**1980-2001 Theory of ion-atom collisions**

(perturbation series (Born and CDW), capture, excitation and ionisation, transport in solids)

**1997-now Complex Dynamical Systems**

(chaos characterisation and control, time series analysis, dynamical reconstruction)

**2001-2006 Optical Orientation Dynamics in Nematic Liquid Crystals****2001-now Physics at the Service of Health**

(studies of dynamical diseases : Parkinson tremors, epilepsy, cardiac arrhythmia ; contact network epidemiology : propagation of infectious diseases, containment and intervention scenarios)

**2006-now Optical Cavity-based Photonics**

(chaos in optical systems, ray-wave dualism, micro-lasers and -sensors, e-m wave propagation and optimization in complex medium)

**2008-now Theory of Complex Networks**

(propagation dynamics on networks, adaptive networks, co-evolution of networks and dynamical processes, percolation on networks, network growth, communities detection)

More details of our present *Research Activities* and *Publications* can be found on the Web page of our research group DYNAMICA : [www.dynamica.phy.ulaval.ca](http://www.dynamica.phy.ulaval.ca).

**III. TEACHING (PRESENT)****undergraduate courses :**

Physique mathématique / MATHEMATICAL PHYSICS

Physique statistique / STATISTICAL PHYSICS

Dynamique nonlinéaire, chaos, et complexité / NONLINEAR DYNAMICS, CHAOS, AND COMPLEXITY

Physique numérique / COMPUTATIONAL PHYSICS

**graduate courses :**

Séminaire de dynamique moderne / MODERN DYNAMICS SEMINAR

Physique statistique avancée / ADVANCED STATISTICAL PHYSICS

Introduction à l'optique quantique / INTRODUCTION TO QUANTUM OPTICS

Processus stochastiques en sciences de la Nature / STOCHASTIC PROCESSES IN THE NATURAL SCIENCES

Théorie des systèmes complexes / THEORY OF COMPLEX SYSTEMS