

CURRICULUM VITAE

NAME : **Clénet**

Surname : **Stéphane**

Birth : **21 avril 1967**

Institution : **Arts et Métiers ParisTech**

Position : **Full professor**

Discipline : Electrical Engineering

I-Academic Cursus

In 1990, I got an engineering degree in Electrical Engineering with ENSEEIHT and also a master degree in Electrical Engineering with the INPT in Toulouse France.

From 1990 to 1993, I prepared my PhD with the Laboratory of Electrical and Industrial Electronics (LEEI) in Toulouse on the influence of the power electronic supply on the vibrational behavior of a permanent magnet synchronous machine. My doctorate was supervised by Mr. Lajoie-Mazenc. I obtained my PhD degree in Electrical Engineering of the Institut National Polytechnique de Toulouse in 1993.

In December 2001, I defended a HdR¹ untitled "Contribution to numerical modeling in static electromagnetism".

II-Professional positions

After a year as postdoc at the LEEI, I got a position of Assistant Professor with the University of Lille 1 in 1994. In 2002, I got a position of Full Professor in Electrical Engineering with Arts et Métiers ParisTech.

I have worked since 1994 in the team "Numerical tools and Methods" in the research group "Laboratoire d'Electrotechnique et d'Electronique de Puissance" of Lille (L2EP²). Since 1994, my research focuses on the development and improvement of numerical models based on the finite element method for the study of electromagnetic systems (cables, transformers, rotating machines...) focusing more on quantification of uncertainties (since 2004) and Model Order Reduction (since 2010). I participated to the supervision of 21 PhD (including 11 as the main supervisor) and 3 are in progress.

I got a sabbatical year (CRCT) for the academic year 2007/2008 to work on the quantification of uncertainties in finite element models. From September 2007 to December 2007, I made several visits to the University of Liege (Belgium) in the group of P. Dular. Between January 2008 and for eight months, I was at the University of Akron (USA) invited by Prof. Nathan Ida which was fund by a Fulbright grant from the French-American Commission. In 2014, I was again invited professor at the University of Akron. From March to July 2015, I was invited professor at the University of Mc Gill in Montreal (Canada).

III-Teaching activities

Since 1990, I teach in the domain of power systems, electrical machines, power electronics. In relation with my research activities in the field of computational electromagnetism, I also teach applied

¹ An HdR is a degree which enables you to be the main supervisor of PhD student.

² <http://l2ep.univ-lille.fr/?lang=en>

mathematics (numerical analysis, probability/statistics) for engineers. I have the experience of different audience coming from University and Grandes Ecoles from the first year of Bachelor to Doctorate. I also had the opportunity to teach or give seminars abroad (USA, Finland, Canada, Germany, Belgium...). I have also changed the training methodology involving more and more the student as an actor of its education and based his evaluation not on the knowledge but more on the acquired competences.

IV-Responsibilities

Head of the team « Modeling »

From 2007 to 2014, I have run the team “Numerical methods and tools” one of the four teams of the research group L2EP³. This team staff was composed of 7 faculty members, 4 postdocs and engineers and 12 PhD students. The team organized the conference NUMELEC in Lille in December 2006 that brought together over 100 researchers coming mainly from French speaking country. The team also organized in July 2008 the twentieth symposium "Electromagnetic Phenomena in Non Linear Circuit". It will co organize COMPUMAG2019 with the research group GEEPS and L2E in Paris in July 2019 (more than 400 participants are expected). Even if the community in France working on numerical modeling of electromagnetic systems is important, the team has worked on original topics like uncertainty quantification, model order reduction, impact of the manufacturing process on the magnetic material behavior. Since 1994, the team “Numerical methods and tools” has also capitalized its know-how in the field of computational electromagnetics in a software so-called code_carmel⁴ and is now used and developed in partnership with the company EDF R&D since 2008 in the frame of a joint research team LAMEL (see III-2).

Director of the LAMEL, joint research team L2EP – EdF R&D

For several years, the company EDF R&D and L2EP have collaborated not exclusively on computational electromagnetics applied to the simulation of electrical equipment such as electrical machines and transformers. It is in this context it was decided to create a joint research team LAMEL. It was officially established on January 2006 for a period of four years. It was renewed for four years in 2010,2014 and 2018. It now involves five research engineers of EDF and the six professors of the team modeling L2EP. There are currently five PhD students and five post docs as non permanents staff. The goals of LAMEL are to run advanced research in numerical modeling in electromagnetism and to capitalize the expertise within code_Carmel. I was appointed director of LAMEL by the Executive Committee in 2008 and resign in 2016.

Management of a department of Research and Teaching

Between 2009 to 2013, I have been responsible for the department "Fluids and Energy Systems" at Arts et Métiers ParisTech. It involves 43 (assistant) professors and 26 lecturers in the areas of electrical engineering, automatic control, fluid mechanics and energetics of all centers of Arts et Métiers ParisTech. The department has to, in agreement with the head of Arts et Métiers ParisTech:

- to define the content of course and the teaching practices,
- to create synergies between the research teams,
- to define in the recruitment policy of professors and lecturers,

⁴ <http://code-carmel.univ-lille1.fr/>

-to contribute to the definition of the scientific strategy of Arts et Métiers ParisTech.

Director of the campus Arts et Métiers of Lille

From 2016 to 2019, I was the director of the campus Arts et Métiers in Lille. Arts et Métiers is composed of 8 campuses spread out on the whole country (Lille, Metz, Chalons en Champagne, Paris, Angers, Bordeaux, Aix, Cluny) and an Head Quarter in Paris. On the campus of Lille, 600 students are involved in different degrees from the bachelor to the doctorate. The staff is composed of 40 faculty members and 80 technical and administrative members. The professors are involved in four research teams working in Material and Processes, Electrical Engineering, Mechatronics/Robotics and Fluids Mechanics/Turbomachinery. The director of the campus (in relation with the Head of Arts et Métiers) has to manage the budget and the human resources, to be the main interlocutor of the regional institutions for research and training....

V-Other activities

Collaborations with companies

We are used to work with companies. Additionally to our special relationship with EdF R&D (LAMEL), we have also worked with the company VALEO (6 PhDs) within several research projects. From 2005 to 2010, work has taken place with the CEA-LIST on the use of magnetorheological fluids for Haptic applications and automotive damping (2 PhDs). We have also worked with big companies (Renault, Pechiney...) and also SME's and startups.

Seminars

I had the opportunity to give several seminars on uncertainty quantification at **Ohio States University** (Colombus-Ohio-2008), **Youngstown States University** (Youngstown-Ohio-2008), **RWTH Aachen** (Aachen-Germany-2010), **Gent University** (Gent-Belgium-2011), **Mc Gill University** (Montreal-Canada-2011) et **Darmstadt University** (Darmstadt-Allemagne-2014).

I was also invited to give a course to PhD students in 2012 at the University of Aalto (Finland) on uncertainty quantification.

Since 2016, I am associate professor at Laval University (Québec, Canada) with which I collaborate since 1998. I currently co supervised a PhD with J. Cros (Professor at Laval University)

Committees

I am member to the scientific committee of the conference in the field of computational electromagnetism:

-NUMELEC (domestic conference which takes place every three years)

-EMF (international conference which takes place every two years)

I was Editor of the conference CEFC 2014 in Annecy.

I am member of the board of the International COMPUMAG Society since 2016. I will be co chair of the next COMPUMAG conference in Paris in 2019.

International collaborations⁵

I have collaborated with RWTH-Aachen (Germany), Darmstadt University (Germany), Gent University (Belgium), Liege University (Belgium), Aalto University (Helsinki), Mc Gill University (Canada), Laval University (Canada), Akron University (USA), Santa Catarina University (Brazil).

VI-Publications

Since 1990, I have published:

- 110 papers in peer reviewed international Journal
 - 124 communications in international conferences
 - 21 communications in national conferences
-

⁵ Leading to at least to a publication in an international journal