

# Curriculum Vitae (April 3, 2009)

## Bernard PHILIPPE

Directeur de recherche INRIA  
1<sup>st</sup> class

In charge of the International Cooperation of  
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BP with some participants of the UNESCO  
chair  
« *Mathematics and Development* »  
ENIT/LAMSIN, Tunis, April 2004

## 1 Administrative data

### 1.1 Civil status

Born 27th of September, 1948 in Versailles; French citizenship. Married, three adult children.

*Distinction* : Chevalier dans l'Ordre de la Valeur du Cameroun (distinction of the Cameroon nation).

### 1.2 Education

1970: Maîtrise de mathématiques (Université d'Orléans)

1972: Agrégation de mathématiques.

1979: Maîtrise d'informatique (Université de Rennes I).

1983: Thèse de Troisième cycle en analyse numérique (Université de Rennes I).

1989: Habilitation à diriger les recherches en informatique (Université de Rennes I).

### 1.3 Positions

1972 - 1974: Military cooperant and civil cooperant : mathematics teacher in high school at Batna (Algeria).

1974 - 1981: Mathematics teacher in high schools (4 years in Alençon and 3 years in Rennes).

From 1981: **Researcher at INRIA-Rennes**, first as Chargé de recherche (first class) and since 1990 as Directeur de recherche (second class).

1984 - 1985: Visiting researcher at CSRD (Center for Supercomputing R & D, Urbana-Champaign (Illinois, USA)).

2003 - 2004: Visiting professor at ENIT (Ecole Nationale d'Ingénieurs de Tunis, Université de Tunis El Manar, Tunisia).

## ***2 Themes of research***

**Thesis :** (Advisor : Michel Crouzeix, University of Rennes). Multistep methods for integrating ordinary differential equations.

### **Present topics**

- Large eigenvalue problems, singular values
- Large linear systems and preconditioners
- Sparse QR factorization, Rank-Revealing techniques
- Parallel algorithms
- Reliable computing
- Application (hydro-geology)

## ***3 Teaching***

Since more than 15 years, I have been teaching at the graduate level, mainly on the following topics:

- Sparse matrix computations
- Iterative methods for large linear systems
- Methods for large eigenvalue problems
- Computer arithmetics and reliability
- Parallelizing numerical algorithms.

## ***4 Scientific animation***

### **4.1 Thesis advising**

I have been advisor or co-advisor for 19 PhDs. Presently, I co-advise:

**Amine Abdelmoula**, PhD between university of Tunis El Manar and university of Rennes 1 ; co-advisor : Maher Moakher.

### **4.2 International co-operation**

#### **European co-operation**

- From 1994 to 1999, I was co-ordinator for two European projects (INCO-Copernicus : project PORTRAIT (CP 940682) and then project STABLE (CP 960237), partners in Bulgaria, Russia, Slovakia, Grece)
- For the **ERCIM consortium** (<http://www.ercim.org/>) and up to 1997, I was the INRIA representative in the steering committee of the Working Group Parallel Processing Network. With Erricos Kontoghiorghes (university of Cyprus), I managed the Working Group : Matrix Computations and Statistics) (<http://www.irisa.fr/sage/wg-statlin/>).

## Co-operation with African teams

Since 1990, I have been involved in such co-operations.

- **With the department of Computer Science of the University of Yaounde I : with Maurice Tchuente and Emmanuel Kamgnia**
  - Teaching at the master level (every year)
  - Participation to the agreement UYI-INRIA-UNU (1992-1998) which has been the frame of the biennial African Conference for Research in Computer Science (**CARI**) <http://www.cari-info.org/> ; I have been secretary of its permanent committee since 1992 to 2002.
  - Participation to the project DIA funded by AUF (Course conception, <http://www.irisa.fr/dia/>)
  - With Maurice Tchuente, co-leader of the project **CAMEREAU** (2001-2004) funded by the French Ministry of Foreign Affairs (hydrogeology)
- **Electronic journal ARIMA:** <http://www-direction.inria.fr/international/arima/> Chief-editor with Maurice Tchuente (UYI), Mohamed Jaoua (University of Tunis El Manar) and Derrick Kourie (University of Pretoria).
- **Electronic journal ETNA:** <http://etna.mcs.kent.edu/> Managing editor.
- **SARIMA project** (<http://www.sarima.org>) : project defined with Claude Lobry (University of Nice Sophia-Antipolis) and Jean-Claude Topin (French Ministry of Foreign Affairs) – 2004-2008, 1.5 M€
- **With the Department LAMSIN of ENIT (Tunis) :**
  - Teaching at the master level (1999-2004)
  - Sabbatical year in Tunis (2003-2004) ; chair of the first semester of the UNESCO chair *Mathematics and Development* on the theme *High Performance Computing* <http://www.tn.refer.org/unesco/accueil-unesco-eng.html> ; one follow\_up week is organized in Tunis (November 2006)
  - Co-advising A. Abdelmoula with M. Moakher

## Other co-operation

- **Beirut :** Since 1996, participation to the steering committee of a master organized between universities of Beirut, University of Rennes I, University of Reims and EPFL in Lausanne
- **USA :** French partner of three grants between **INRIA and NSF** (National Science Foundation, USA), ( with W.J Stewart at Raleigh, Y. Saad in Minneapolis, A. Sameh in Purdue).

## 4.3 Conference organization

I regularly organized scientific workshops and conferences. In 2006 :

- With Masha Sosonkina (Ames Lab., Iowa), I organized a minisymposium, entitled "Issues on robustness of Algebraic Parallel Preconditioners", at the SIAM Conference on Parallel Processing (PP06)
- PMAA'06 , Rennes, Sept. 6-9: fourth edition of the conference Parallel Matrix Algorithms and Applications <http://pmaa06.irisa.fr>
- I organized the invited session "Matrix Computations and Statistics" at the congress COMPSTAT'06 in Rome.
- With Rajae Aboulaich, I organized the workshop of the network HYDRO3+3 which was held in Rabat (Sept. 20-22) [http://www.emi.ac.ma/site\\_workshop/](http://www.emi.ac.ma/site_workshop/)
- I was the chairman of the special week "High Performance Computing" organized at Tunis by the LAMSIN (November 27-December 1<sup>st</sup>) [http://www.tn.refer.org/unesco/HPC-LAMSIN/accueil\\_fr.htm](http://www.tn.refer.org/unesco/HPC-LAMSIN/accueil_fr.htm).

## 4.4 Scientific administration

- 1992-1997 : leader of the Aladin project (project now followed by the SAGE project)
- up to 1999 : Responsible for the International Relatins at IRISA

- 1994-2002 : secretary of the permanent committee of CARI
- from 2004 : secretary and now president of the Groupement d'Interet Scientifique SARIMA.
- from September 1<sup>st</sup>, 2006 : Responsible at INRIA for International Cooperation with African and Middle-East countries

### ***Publications***

2 thesis,

34 publications in international journals (SIAM, Operations Research, APNUM, Numerical Algorithms, LAA, PDCP, Par. Comp., etc.) and chapters of books. List at <http://www.irisa.fr/sage/bernard/List.html>

More than 50 communications in conferences.

Editor for 8 special issues of journals.