

Curriculum vitae

MADAY Yvon.

Date and place of birth : May 20, 1957 at Saint Briec (22000) France. French nationality

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Current positions : Full professor at Université Pierre et Marie CURIE since October 1989,
Professor of « classe exceptionnelle » since september 2001
Visiting Professor at Brown University since september 2003
Consultant at ONERA

Current responsibilities : Director of the Laboratoire Jacques Louis Lions (2001-...)
President of the Scientific Committee of SMAI (2007-..)

Editor at Annales de l'Institut Henri Poincaré (C) Non Linear Analysis, Calcolo, CAMCoS, Journal of Scientific Computing,

Editor in chief of MathematicS In Action

Award : Prix Blaise Pascal (Gamni-Smai) of the French Academy of Sciences in 1991.
Member of the European Academy of Sciences since 2003
Section lecturer, International Congress of Mathematicians, Madrid 2006

About 35 former PhD students, currently 6 PhD students

Author of 6 books and more than 200 scientific papers

Former main responsibilities

Director of the School of Doctoral Studies (1999 - 2004)
Department Head (1994-2001)
Director of the Scientific Council of the Math Department (2001-2004)
Director of the Federal Institute in Maths (2005)
(that regroups all the labs of maths in university of Paris 6 and 7, about 1000 mathematiciens)
President of the board of deputies of the center for high computing of the ministry of research (1999-2005)
President Smai (june 2004 - 2006)
Initiator and director of the CEMRACS

Rapid presentation of the scientific activity

Numerical Analysis

Spectral methods

Culminated in 4 books :

- C. Bernardi, Y. Maday « Approximation spectrales de problèmes aux limites elliptiques » Mathématiques et Applications, Springer Verlag, Paris 1994.
- C. Bernardi, Y. Maday « Spectral Methods » Handbook of Numerical Analysis, P.G. Ciarlet et J.L. Lions eds. 1997
- C. Bernardi, M. Dauge, Y. Maday : « Spectral Methods for Axisymmetric Domains », Series in Applied Maths, Ciarlet Lions eds, Editions Scientifiques et Médicales Elsevier, Paris, 1999.
- C. Bernardi, Y. Maday, F. Rapetti : « Discrétisations variationnelles de problèmes aux limites elliptiques », Mathématiques et Applications, Springer Verlag, Paris, vol 45 (2004).

The mortar element method

- C. Bernardi; Y. Maday; A.T. Patera « A new nonconforming approach to domain decomposition: the mortar element method » in *Nonlinear Partial Differential Equations and Their Applications*, H.BREZIS and J.L. LIONS eds Pitman. 1994
- F. Bouilleau A. Buffa, Y. Maday, F. Rapetti : « The mortar edge element method in three dimensions application to magnetostatics », *SIAM J. Scient. Comp.*, **24** 4, pp. 1303-1327, 2002.

A posteriori analysis of outputs reduced basis methods

- Y. Maday : « Reduced Basis Method for the Rapid and Reliable Solution of Partial Differential Equations » Proceeding ICM Madrid

Parallelization

Domain decomposition and Parareal algorithm

- Y. Achdou, Y. Maday, O. Widlund, « Iterative Substructuring Preconditioners for Mortar Element Methods in Two Dimensions », *SIAM J. Numer. Anal.*, Vol. 36, No. 2, 1999, 551-580
- Maday, A. T. Patera, D. Rovas : « A Reduced-Basis Output Bound Method for Noncoercive Linear Problems », in *Nonlinear partial differential equations and their applications. Collège de France Seminar*, Vol. XIV (Paris, 1997/1998), 533--569, North-Holland, Amsterdam, 2002
- Y. Maday : « The parareal in time algorithm », in *Substructuring and Domain Decomposition Methods*, F. Magoulès ed., Saxe Coburg Publications, UK, 2008

Analysis of coupled problems and Problems in life sciences

- Y. Maday : « Analysis of coupled models for fluid-structure interaction of internal flows », in *Cardiovascular Mathematics*, A. Quarteroni, L. Formaggia and A. Veneziani Eds) Springer 2009.

Problems in quantum chemistry

- E. Cancès, M. De Franceschi, W. Kutzelnigg, C. Le Bris, Y. Maday : « Computational quantum chemistry : a primer », *Handbook of Numerical Analysis*, P.G. Ciarlet C. Le Bris eds. 2003
- E. Cancès, C. Le Bris, Y. Maday : « Méthodes mathématiques en chimie quantique - Une introduction », *Mathématiques et Applications*, Springer Verlag, Paris (2005) translation in progress