

Name **DAUGE**
Given name **Monique**

1. VITA

Born 6 octobre 1956
in Nantes, France

Education

1978 Agrégation de Mathématique (8e)
1980 Thèse de troisième cycle (*thesis*), Nantes
Etude de l'opérateur de Stokes dans un polygone : régularité, singularités et théorème d'indice.
1986 Thèse d'Etat (*habilitation*), Nantes
Régularités et singularités des solutions de problèmes aux limites elliptiques sur des domaines singuliers de type à coins.

Employment

1978–80 Boursier DGRST (*doctoral grant*), Nantes.
1980–84 Attaché de Recherches CNRS (*junior researcher*), Nantes.
1984–96 Chargé de Recherches CNRS 1e classe (*researcher*), Nantes.
1996 Directeur de Recherches CNRS (*senior researcher*), Rennes

Scientific publications

- Author of the book [1]: *Elliptic boundary value problems in corner domains*. Lecture Notes in Mathematics **1341**, Springer-Verlag 1988.
- Co-author with C. Bernardi and Y. Maday of the book [2]: *Spectral Methods in Axisymmetric Domains*. Series in Applied Mathematics **3**, 1999.
- Co-author with V. Bonnaillie-Noël and N. Popoff of the monography [3]: *Ground state energy of the magnetic Laplacian on corner domains*. Mémoires de la Société Mathématique de France **145**, 2016.
- Author or co-author of more than 120 articles.

2. SHORT PRESENTATION

I am belonging to the department of mathematics of the university Rennes 1. I have a senior research position in the team of numerical analysis. My main domains of interest are electromagnetism, elasticity and quantum mechanics (theoretical analysis and numerical approximation). The questions that I address are at large related to geometrical singularities and singular perturbations. Computations of eigenvalues by finite elements are often a key illustration of my works.

3. PUBLICATIONS

- [1] M. Dauge, *Elliptic boundary value problems on corner domains*, vol. 1341 of *Lecture Notes in Mathematics*. Berlin: Springer-Verlag, 1988. Smoothness and asymptotics of solutions.

- [2] C. Bernardi, M. Dauge, and Y. Maday, *Spectral methods for axisymmetric domains*, vol. 3 of *Series in Applied Mathematics (Paris)*. Éditions Scientifiques et Médicales Elsevier, Paris: Gauthier-Villars, 1999. Numerical algorithms and tests due to Mejdi Azaïez.
- [3] V. Bonnaillie-Noël, M. Dauge, and N. Popoff, “Ground state energy of the magnetic Laplacian on corner domains,” *Mém. Soc. Math. Fr. (N.S.)*, no. 145, pp. vii+138, 2016.
- [4] M. Costabel, M. Dalla Riva, M. Dauge, and P. Musolino, “Converging expansions for Lipschitz self-similar perforations of a plane sector,” *Integral Equations and Operator Theory*, vol. 88, no. 3, pp. 401–449, 2017.
- [5] M. Chaussade-Beaudouin, M. Dauge, E. Faou, and Z. Yosibash, “Free Vibrations of Axisymmetric Shells: Parabolic and Elliptic cases,” *Asymptotic Analysis*, vol. 104, no. 2, pp. 1–47, 2017.
- [6] M. Chaussade-Beaudouin, M. Dauge, E. Faou, and Z. Yosibash, “High frequency oscillations of first eigenmodes in axisymmetric shells as the thickness tends to zero,” in *Operator Theory Advances and Application*, vol. 258 of *Recent Trends in Operator Theory and Partial Differential Equations - The Roland Duduchava Anniversary Volume*, pp. 89–110, Birkhäuser/Springer, 2017.
- [7] C. Bernardi, M. Costabel, M. Dauge, and V. Girault, “Continuity properties of the inf-sup constant for the divergence,” *SIAM J. Math. Anal.*, vol. 48, no. 2, pp. 1250–1271, 2016.
- [8] V. Bonnaillie-Noël, M. Dauge, N. Popoff, and N. Raymond, “Magnetic Laplacian in sharp three-dimensional cones,” in *Spectral theory and mathematical physics*, vol. 254 of *Oper. Theory Adv. Appl.*, pp. 37–56, Birkhäuser/Springer, [Cham], 2016.
- [9] M. Dauge, T. Ourmières-Bonafos, and N. Raymond, “Spectral asymptotics of the Dirichlet Laplacian in a conical layer,” *Commun. Pure Appl. Anal.*, vol. 14, no. 3, pp. 1239–1258, 2015.
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