

# Curriculum of Concetta Laurita

## PERSONAL DATA

Cognome e nome : Laurita Concetta

Birthdate: July 2, 1971

Birthplace: Potenza Italy Pregnancy and maternity leave: 19/08/2005 - 28/02/2006, 16/07/2008 - 23/02/2009

## EDUCATION

- Degree in Mathematics cum laude in 1996 at the University of Basilicata. Title of the thesis: Metodi numerici per alcune classi di equazioni integrali. Advisor: Prof. Giuseppe Mastroianni.
- PhD in Applied Mathematics and Informatics in 2002 at the University of Naples "Federico II". Title of the thesis: Metodi numerici per equazioni integrali e numeri di condizionamento dei sistemi lineari connessi.

## PROFESSIONAL EXPERIENCE

- Teachers of Mathematics in Advanced Secondary School from September 1, 2001 to January 2, 2005.
- Researcher in Numerical Analysis at the University of Basilicata since January 3, 2005.

## TEACHING ACTIVITY

- Metodi numerici per il calcolo scientifico
- Analisi Numerica
- Integrazione e derivazione numerica
- Laboratorio di Calcolo Numerico

- Calcolo Scientifico
- Calcolo Numerico

## RESEARCH INTERESTS

- Polynomial Approximation Theory
- Integral Equations
- Numerical treatment of BIE

## GRANTS

- “Approssimazione e quadratura numerica in una o pi dimensioni”, GNIM project, leader Professor G. Mastroianni (2000-01);
- “Trattamento numerico di equazioni integrali e di connessi problemi di algebra lineare”, GNCS project, leader Professor G. Rodriguez (2001–02);
- “Metodi Numerici per Equazioni Integrali”, GNCS (INDAM) Project, leader Professor Giuseppe Mastroianni (2003);
- “Trattamento numerico di equazioni integrali singolari e connessi problemi di approssimazione e quadratura”, GNCS Project, leader Professor G. Mastroianni (2004);
- “Trattamento numerico di equazioni integrali singolari e connessi problemi di approssimazione e algebra lineare”, GNCS project, leader Professor G. Mastroianni (2005);
- “Metodi numerici per l’algebra lineare strutturata e applicazioni”, PRIN project, leader Professor D. Bini, (2006).
- “Equazioni integrali con struttura e sistemi lineari”, PRIN project, leader Professor D. Bini, (2008).

- “Accoppiamento di metodi numerici per BIEs e PDEs relativi a problemi evolutivi esterni e multistrato”, GNCS Project, leader Doctor Alessandra Aimi, (2012).
- “Metodi fast per la risoluzione numerica di sistemi di equazioni integro-differenziali”, GNCS Project, leader Doctor Alessandra Aimi, (2013).

## TALKS

- Laurita C., Mastroianni G., Russo M. G., *Numerical solution for the generalized airfoil equation*, Workshop on Advanced Special Functions and Applications, Melfi (PZ), Italy, May 9–12, 1999.
- Laurita C., Mastroianni G., *Numerical methods and condition numbers for Fredholm integral equations of the second kind*, Meeting on Approximation Theory and Numerical Analysis, Vico Equense (NA), Italy, August 31–September 1, 1999.
- Laurita C., Mastroianni G., *Numerical methods for Fredholm integral equations and related condition numbers*, 2nd Workshop on Advanced Special Functions and Integration Methods, Melfi (PZ), Italy, June 18–23, 2000.
- Laurita C., Mastroianni G., *On the well conditioning of finite dimensional problems related to integral equations*, Workshop on Quadrature and Numerical Methods for integral equations, Rifreddo (PZ), Italy, September 16–20, 2000.
- Laurita C., Mastroianni G., *Numerical methods for Fredholm integral equations of the second kind and related condition numbers*, 4th International Conference on Functional Analysis and Approximation Theory, Acquafredda di Maratea (PZ), Italy, September 22–28, 2000.
- Laurita C., Mastroianni G., *Metodi di proiezione per equazioni integrali di Fredholm sul semiasse reale*, Equazioni integrali: recenti sviluppi numerici e nuove applicazioni, Parma, Italy, September 27–28, 2007.

- De Bonis M. C., Laurita C., *A Nyström method for Cauchy singular integral equations with negative index*, FAAT 2009, 6th International Conference of Functional Analysis and Approximation Theory, Acquafredda di Maratea (PZ), Italy, September 24–30, 2009.
- De Bonis M. C., Laurita C., *A quadrature method for systems of Cauchy Singular Integral Equations*, NAAT 2010 Numerical Analysis and Approximation Theory, Cluj-Napoca, Romania, September 23–26, 2010.
- Laurita C., *A quadrature method for Cauchy Singular Integral Equations with index  $-1$* , Workshop on Functional Analysis and Operator Theory, Altenberg, Germany, March 29–April 1, 2011.
- Fermo L., Laurita C., *Un metodo numerico per il problema di Dirichlet su domini con frontiera regolare a tratti*, Giornata di studio conclusiva del Progetto GNCS “Tecniche numeriche per problemi di propagazione di onde elastiche in multidomini”, Parma, Italy, January 31, 2012.
- Fermo L., Laurita C., *A numerical method for the Dirichlet problem on domains with corners*, SIMAI 2012, Torino, Italy, June 25-28, 2012.
- Fermo L., Laurita C., *A Nyström method for solving the exterior Neumann problem on planar domains with corners*, ICCAM 2012, Gent, Belgium, July 9-13, 2012.
- Fermo L., Laurita C., *On a Nyström method for a boundary integral equation related to the exterior Neumann problem on planar domains with corners*, Giornata di studio conclusiva del Progetto GNCS “Accoppiamento di metodi numerici per BIEs e PDEs relativi a problemi evolutivi esterni e multistrato”, Torino, Italy, February 18-19, 2013.
- Laurita C., *On the evaluation of some integral operators with Mellin type kernel*, NAAT 2014, Cluj-Napoca, Romania, September 17-20, 2014.
- De Bonis M. C., Laurita C., *On the numerical solution of integral equations of Mellin type*, NETNA 2015, Falerna (CZ), Italy, June 18-21, 2015.

## PUBLICATIONS

- Laurita C., Occorsio D., *Numerical solution of the generalized airfoil equation*, Proceedings of the Workshop “Advanced Special Functions and Applications”, Melfi (PZ) Italy May (1999) 211-223.
- Laurita C., Mastroianni G., Russo M.G., *Revisiting CSIE in  $L^2$  : Condition Numbers and Inverse Theorems*, Series in Mathematical Analysis and Applications, Vol. 2, Gordon and Breach Publishers (2000) 159-184.
- Laurita C., *Condition numbers for singular integral equations in weighted  $L^2$  spaces*, J. Comput. Appl. Math., 116 (2000) 23-40.
- Laurita C., Mastroianni G., *Revisiting a quadrature method for CSIE with a weakly singular perturbation kernel*, Operator Theory: Advances and Applications, Vol. 121 (2001) Birkhuser Verlag Basel/Switzerland, 307-326.
- Laurita C., Mastroianni G., *Condition numbers in numerical methods for Fredholm integral equations of second kind*, J. Integral Equations Appl., (FALL, 2002) 14 (2002), no. 3, 311-341.
- Frammartino C., Laurita C., Mastroianni, G., *On the numerical solution of Fredholm integral equations on unbounded intervals*, J. Comput. Appl. Math. 158 (2003), no. 2, 355-378.
- De Bonis M. C., Laurita C., *Numerical treatment of second kind Fredholm integral equations systems on bounded interval*, J. Comput. Appl. Math., 217 (2008) 64-87.
- De Bonis M. C., Laurita C., *Nyström methods for Cauchy Singular Integral Equations. A survey.*, Riv. Mat. Univ. Parma (7) 8 (2008), 139-169.
- Laurita C., Mastroianni G.,  *$L^p$ -convergence of a special Lagrange interpolation polynomial on the semiaxis*, Acta Math. Hungar., vol. 120; (2008) 249-273.

- Laurita C., Mastroianni, G., *Projection Methods in  $L^p$ -norm for Fredholm Integral Equation on the real semiaxis*, J. Integral Equations Appl., 21 (4) (2009) 559-596.
- De Bonis M. C., Laurita C., *Nyström method for Cauchy Singular integral equations with negative index*, J. Comput. Appl. Math., 232 (2009) 523-538.
- De Bonis M. C., Laurita C., *A quadrature method for systems of Cauchy Singular Integral Equations*, J. Integral Equations Appl., 24 (2) (2012) 241-271.
- Laurita C., *A quadrature method for Cauchy Singular Integral Equations with index  $-1$* , IMA Journal of Numerical Analysis, 32 (3) , (2012) 1071-1095.
- De Bonis M. C., Laurita C., *Numerical solution of systems of Cauchy Singular Integral Equations with constant coefficients*, Appl. Math. Comput. 219 (2012) 13911410
- Fermo L., Laurita C., *A Nyström method for the numerical solution of a boundary integral equation related to the Dirichlet problem on domains with corners*, Numer. Math. 130 (2015) 35-71, DOI: 10.1007/s00211-014-0657-6.
- Fermo L., Laurita C., *On the numerical solution of a boundary integral equation for the exterior Neumann problem on domains with corners*, Appl. Numer. Math. 94 (2015) 179-200, DOI: 10.1016/j.apnum.2015.03.010.
- Laurita C., *An algorithm for the evaluation of some Mellin integral operators and its application to the solution of second kind integral equations*, Submitted.
- De Bonis M. C., Laurita C., *A modified Nyström method for integral equations with Mellin type kernels*, Submitted.
- C. Laurita, *A numerical method for the solution of an exterior Neuman problem on domains with corners*, In progress.

- Fermo L., Laurita C., *A Nyström method for mixed boundary value problems on domains with corners*, In progress.
- De Bonis M. C., Laurita C., *A Nyström method for integral equations with fixed singularities of Mellin type in weighted  $L^p$  spaces*, In progress.

#### REFeree ACTIVITY

- Journal of Computational and Applied Mathematics.
- Applied Mathematics and Computation
- International Journal of Physical Sciences.
- Publication de l'Institut Mathématique.

#### REVIEWER ACTIVITY

- Mathematical Reviews