CV Bruna Germano

PERSONAL DETAILS:
name: Bruna
family name: Germano
born: Rome, 7th march 1952
address: Via Monte Autore 3, 00141 Rome, Italy
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EDUCATION:

1970 Secondary school certificate, Liceo Classico Orazio, Rome
1974, 24th june B.A, in Mathematics final grade 110/110 cum laude, Faculty of Mathematical Physical and Natural Science, University of Rome "La Sapienza"

CAREER:

1974 Qualified as teacher of mathematics and physics for secondary school, final grade 100/100

1974/75 Assistant Lecturer in mathematics, Faculty of Mathematical Physical and Natural Science, University of Rome "La Sapienza"

1st September 1975 – 30th june 1981 Research Fellowship in Mathematical Analysis, Department of Applied Mathematics (ME.MO.MAT.), Faculty of Engineering, University of Rome "La Sapienza"

1st July 1981 – 20th September 1988 Lecturer in Mathematical Analysis, Department of Applied Mathematics (ME.MO.MAT.), Faculty of Engineering, University of Rome "La Sapienza"

20th September 1988 – 1st November 1990 Associate Professor in Mathematical Analysis, Faculty of Mathematical Physical and Natural Science, University of Naples "Federico II"

1st November 1990 -2009 Associate Professor in Mathematical Analysis, Department of Applied Mathematics (ME.MO.MAT.), Faculty of Engineering, University of Rome "La Sapienza

COURSES:

1975/76 – 1979/80 Assistant for Mathematical Analysis classes Faculty of Engineering, University of Rome "La Sapienza"

1980/81 - 2010/11 Professor for Mathematical Analysis classes Faculty of Engineering, University of Rome "La Sapienza" and University of Latina "Pontina"

SCIENTIFIC WORK

- Study of asymptotic density of zeros in an orthogonal polynomial system with application to the theory of neutron transport
- Study of relativistic and non relativistic orthogonal polynomial, their asymptotic behaviour and asymptotic distribution of zeros with application to the theory of relativistic quantum oscillator of the hydrogen atom and resolution of a special class of Schroedinger equations
- Other classes of polynomials connected with the classes above, has been introduced with application to the theory of molecular aggregates based on resolution of multi-dimensional Schroedinger equation.
- A method to calculate eigenvalues and eigenvectors for differential problems in which it is possible to write expressly the Green function. This method is useful for numerical approximation both in differential problems at fourth order limit (vibrations of rotating bar) and to calculate self-frequencies of plates and shells of given form. These classes of polynomials are important also for the following problems: calculus of eigenvalues, integral transforms, uniform approximation of complex variable functions in given fields, theory of multidimensional approximation.
- Calculus of eigenvalues of differential problems with integral Fredholm equations to evaluate critical frequencies for transversal vibration of rigid bars.