

Marta Silvia Maria Mantovani was born during the Second World War in a village near Milan (Usmate-Velate¹, Italy). When she was almost 7 years old, her family moved to São Paulo (Brazil). She continued her studies, which she had already started in Italy, at Santa Marcelina School, in the Perdizes neighborhood, and attended high school at Dante Alighieri College. She took the entrance exam in Physics at the University of São Paulo in 1962, obtaining the graduation in 1965 and the Bachelor degree in 1966. In the last two years (1965-1966), she was awarded with a scholarship to participate in the research at the High Energy Interactions Group. In the same period, she acted as teaching assistant in the Atomic Physics Laboratory. In the second semester of 1967, the research group moved to Campinas, where at the year-end she was offered a job and started her PhD project under Cesar Lattes¹ advice.

In about three years two groups of Fireballs differing in their mass, were identified as Mirim and Assú. Additionally, she observed a new state of matter (Torpedo), while performing a re-analysis of Bristol Bombay published data². Holding these results, the first student at the Physics Institute of UNICAMP, presented her PhD thesis "Observations on the multiple production of pions by hadrons of the Cosmic Radiation" (1971).

The proposal of a New Project led to Interact with the Geochronology Center at the University of São Paulo (CPGeo), where she spent one year on a post-Doc. project under the advice of Umberto Cordani. The proposed dating methodologies were the fission tracks and Rubidium-Strontium. Although these were not the ideal dating methodology for the proposed problem, they were used as a learning procedure. The first obtained results for Fission Tracks, were published in the Scientific Journal Earth and Planetary Science Letters (1974 vol. 2 311-318). This same year she competed with other candidate to a Nuclear Geophysics post at the Institute of Astronomy, Geophysics and Meteorology (IAG-USP), where she started her academic carrier (1974).

In July-august, 1978, she spent a few weeks in Oslo (Norway), to learn the NAA³ methodology, inexistent in the Latin America. Following the activities for the master's degree work of two students under her advice (L.S.M. and M.A.S.), she transferred the methodology the IPEN⁴, where it was made available to the scientific community. Publications on this theme can be found in: EPSL 1979 (vol. 42: To attend some of the multiple research which would be classified in Nuclear Geophysics, she established a bi-lateral agreement with Italy (CNPq-CNR), to verify the potentiality of the volatile radioactive element ²²²Rn, in forecasting volcanic eruptions and earthquakes. After updating on the subject (J. Volcan Geoth Res, 1978; vol. 3: 325-341), and obtaining the appropriate device to host the ²²²Rn detector, the experiment was setup at the Volcano Island (Italy). The results proved the method potentiality, showing an increase of the Rn concentration preceding in three weeks a seismic activity (Geophys. Res. Lett., 1981: 120:962-965).

On the same subject, she supervised a master's degree (F.B.R.) to determine the Rn-222 diffusion constant, (An. Acad. Bras. Cienc. 1984, 56:183-196; and Bull. Geof. Pura e Appl., 26:135-141).

At this time, the Brazilian Geological Survey (CPRM⁵), made available, to the academic community, an aeromagnetic survey, flown over the southern part of Minas Gerais State. The analysis and interpretation of these data were used to define the "Curie Surface" for that area. Results were published in the Scientific Journal Nature, in 1979, "Depth of Curie Temperature computed from Aeromagnetic anomalies, in Southeastern Minas Gerais" (vol. 9: 845-846). Gravity Surveys performed in the same area of the Aeromagnetic Survey, allowed to identify crustal structures⁶.

In 1984 she was appointed as **Scientific Advisor at FAPESP**⁷ and, in the following year (1985), she was invited as **Member of the Technical and Scientific Council of the National Observatory**, until 1991. In the same year of 1985, she was appointed **ad hoc Advisor of the Advisor Committee of CNPq**⁸ for three intercalated terms (1984-2001)⁹, and for the last term, as **Coordinator of the Advisor Committee of Geophysics, Meteorology and Geodesy**.

In these years, Gravity and Magnetic surveys were continuously performed and complemented with isotope and geochemistry data, mainly in the Paraná basin. The first geochemical data were obtained in the laboratories of Pisa University, and the excellent results¹⁰ suggested to search for partnership using these methods.

In 1986, she was nominated as **Editor of the Brazilian Geophysical Journal**, that was late, until updated in 1991. Involved in the activities of the Brazilian Society of Geophysics, she was elected **President of the Society SBGf (1995-1997)**, being the first woman in this post of SBGf.,

From 1997 to 2001, she was **Vice-Director of the Institute of Astronomy, Geophysics and Science of Atmosphere of the São Paulo University** (IAG-USP).

With her colleagues at IAG-USP, participated of the International Program of Transsects, presenting two profiles, Brusque and Santa Catarina. Both were published in 1991, by AGU (American Geophysical Union), of which she was an associate and member of the **Regional Advisory Committee** (RAC: 1995-1997).

¹ Brazilian well known scientist, who participated in the meson-pi discovery.

² P.K. Malhorta et al., 1963. Nuovo Cimento, vol. 40An.2,pg385

³ Neutron Activation Analysis

⁵ Companhia de Pesquisas em Recursos Minerais

⁶ Revista bras. Geocienc., 1979, V. 9:33-38 and 39-43

⁷ Fundação de Amparo à Pesquisa do Estado de S

⁷ Conselho Nacional de Desenvolvimento Científico e Tecnológico.

⁷ 85-89, 93-97, 97-2001.

⁷ Journal of Petrology, 1985: vol. 25:187-209;Atalla et al., An Acad bras Cienc, 1985 vol17 :19-33.ão Paulo.

⁸ Conselho Nacional de Desenvolvimento Científico e Tecnológico.

⁹ 85-89, 93-97, 97-2001.

¹⁰ Journal of Petrology, 1985: vol. 25:187-209; Atalla et al., An. Acad. Bras. Cienc., 1985 vol. 17 :19-33.

In 1984, the bilateral agreement with Italy reached the end, and due to the difficulty in obtaining geochemical and isotope analysis in Brazil, she established a new exchange agreement, this time with England (CNPq-British Council). First results were published in *Nature*, (1986; 322:356-359).

In 1985 she obtained the "**Livre Docencia**," one more step in her academic career¹¹, which requires presenting a thesis on the working subject. Her presentation. "Isotope characterization of the Paraná Basin magmatism, its correlation with the underneath crust and with the opening of the were South Atlantic" received full approval.

During about 10 years collecting and analyzing samples from the large area, the Paraná Flood Basalts Province, was geochemically characterized, as well as the magmatic processes which occurred in the Gondwana break-up, and Africa-South America drift. The exchange British Council-CNPq promoted the visit of scientists and students interested on the topic. (*J.Petrology*, 1988; *Geological Magazine*,1989; *Geology*, 1990; *Contrib. Mineral. Petrol.*, 1990; *Bull. Volc.*, 1992; *J. Geophys. Res.*, 1996; *EPSL.*, 1997; *J. Petrol.*, 1997; among others).

In 1989, together with other two candidates, she competed for a **Full Professor** position, at the Geophysics Department, IAG-USP, winning the contest.

From 1991 to 1994 she acted as *Brazilian Coordinator of the International Lithosphere Program (ILP) promoted by: the two international Unions : IUGS¹² and IUGG¹³*. While interacting with these two Unions, she started an ILP project: on the geophysical characteristics of the S-SE lithospheric segment in Brazil. (*Earth and Planet. Interiors*, 1999, 114: ; 81-90; *Phys. Earth. Planet. Int.* 1999,n 114:91-98; *J South Amer. Earth Sci.*,14:11,-14; *EPSL*, 2005, 230:497-412).

In the time interval 1995-2000 she performed as **Chairman of ILP National Committees**.

This same year (1994) one of her PhD students using Solid Earth Tides as a response of the Lithosphere to a loading, (Tide) spent one year in Belgium, through another **bilateral agreement (ORB¹⁴- IAG-USP)**. As results, a comparison of the mechanical behavior between the two lithosphere (African and South American) was obtained. (*EPSL*, 2005, 230:397-412).

From 1995 to 1999, she was elected as member of the **IAVCEI¹⁵** Executive Committee.

In 1997 was elected **MEMBER of the BRAZILIAN ACADEMY OF SCIENCE. In 2008, MEMBER of the São Paulo State Academy of Science**,

In this same year (1997), one of her PhD student presented her thesis on the geophysical reconstruction of the basement of the Paraná basin. This work originated a new interpretation of the disposition of tectonic plates, as subsidy to the evolutionary theories from Rhodinia to Gondwana; (*Gondwana Research*, 8:303-315).

Em 1999 she was Paranymp of the Geophysics trainees, in 2000 she was Paranymp of the Geophysics and Meteorology trainees, and in 2005 Honored Professor for the Geophysics trainees.

From 2000 to 20 she was Member of the Nominating Committee of IUGS, and during 2005-2006, Member of the Executive Committee . of IUGS. In 2001 she was President of the International Cooperation Commission of São Paulo University.

In 2001 was indicated as manager, in 2002 as Pro-tempore Director, and in 2003 as Director of the of the Science and Technology Park (PEFI), where she remained until 2011.

The Cientec Park was created in the area left by IAG-USP and had as first project the reconversion of historical buildings and the creation of ludic spaces for science dissemination among the population in general.

In 2004 was summoned as Member of the Technical Group of Parque Estadual das Fontes do Ipiranga¹⁶ - Secretary of Environment of São Paulo State.

For the Ministry of Science and Technology (MCT), in 1993 and in 1995 was member of PADCT¹⁷, 1996 member of PRONEX¹⁸; 2009 member of Search Committee.

In 2005 was Member of CAPES¹⁹ Committee

In 2005, she received the "Nero Passos Award "for Education and Research in Geophysics.

In 2008.she was awarded with the NATIONAL ORDER OF THE SCIENTIFIC MERIT and COMENDATOR TITLE, by the Republic Presidency. She published more than 200 papers (among articles, books, chapters, short notes) in international scientific journals and books; supervised more than 100 students (from graduation to post-PhD level), participated and organized conferences, seminars, congress, debates, fieldtrip, Panels, etc.

She retired in 2014, at 70, and the next two years she remained at IAG as Senior Professor.

A complete CV can be found in: <http://Lattes.cnpq.br/119370786873409>

¹¹ Equivalent to Tenure track

¹² International Union of Geological Sciences

¹³ International Union of Geodesy and Geophysics

¹⁴ Observatoire Royal de Belgique

¹⁵ International Association of Volcanology and Chemistry of the Earth Interior

¹⁶ State Park of Ipiranga Springs

¹⁷ Programa de Apoio ao Desenvolvimento Científico e Tecnológico

¹⁸ Programa de Núcleos de Excelência

¹⁹ Coordenaçõ de Aperfeiçoamento de Pessoal de Nivel Superior