

Emilio Matricciani



Emilio Matricciani was born in Italy, in 1952. After serving in the Italian Army, he received the Laurea degree in Electronics Engineering at Politecnico di Milano, Milan, Italy, in 1978. He joined Politecnico di Milano in 1978 with a research scholarship, and in 1981, he became assistant professor of Electrical Communications. In 1987, he joined Università di Padova, Padua, Italy, as associate professor of Microwaves. In 2001, he qualified as full professor of Telecommunications but did not get this position thanks to far-sighted colleagues. Since 1991, he works with Politecnico di Milano, as professor of Telecommunications where he has taught, in the years, Information Theory, Communications Systems, Probability. Actually, he teaches a course on Terrestrial and Satellite communications Systems. In addition to the institutional activities, he teaches Scientific Writing to PhD students at Politecnico di Milano and in other Italian Universities.

His research interests include satellite communications for fixed and mobile systems, deep-space communications, radio propagation at millimetre waves, rain effects on satellite system design, including frequency diversity, site diversity and time diversity. Most of his early experimental and theoretical activities concerned the propagation and communication experiments devised at Politecnico di Milano by Francesco Carassa and Aldo Paraboni (satellites SIRIO, ITALSAT, ALPHASAT Aldo Paraboni experiment). In the '90s and in the 2000's, he has conducted extensive research on communications with mobile terminals running in the rain and linked to satellites in the geostationary orbits, or in lower orbits, and on developing rain attenuation prediction models useful to predict first order (probability distribution functions) and second order (fade durations, rates of change, unavailability during the time of the day) statistics for satellite systems design, such as the Synthetic Storm Technique.

In the last years, he has published papers on a mathematical theory of de-integrating probability distributions of rainfall collected in hours or even days into rain rate probability distributions integrated in 1 minute, useful for communication systems design.

Recently he has studied the meteorological data on rain reported in the extraordinary literary work of the Italian mystic Maria Valtorta, comparing them to the current and ancient meteorological data of the Holy Land at the time of Jesus of Nazareth.

He is the author of about 150 papers, subdivided almost equally in international journals and international conferences, mostly authorized only by him, and of several books on telecommunications and a guide on scientific-technical writing.

List of papers

a) Papers in Journals

- [1] C. Capsoni, E. Matricciani, A. Paraboni, The relationship between the attenuation at 11.6 GHz and 17.8 GHz, *Alta Frequenza*, 1979, 48, 384-387.
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b) Papers in Conferences Proceedings

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