

In memoriam Michele Elia

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Michele Elia, born on January 2, 1945, graduated in Electronic Engineering at the Polytechnic of Turin in 1970 and spent his entire career at that university, also holding academic-managerial roles. Since 1990, he has been Full Professor of Information Theory and has taught numerous courses on this subject and related ones, in particular Cryptography and Coding Theory, until his retirement in 2015.

After he retired he became Professor Emeritus in 2017, continuing his research activities, supervising his many students and teaching courses of the highest level at prestigious institutions.

During his career, he was Visiting Professor at many universities, including the Universitat Politècnica de Catalunya, Universidade Estadual de Campinas (UNICAMP), the Notre Dame University in the USA, University of Zurich, and University of Delhi.

The year 2017 saw him among the founders of the Italian cryptography initiative *De Componendis Cifris*, of which he was the first and current President.

His scientific activity has touched both theoretical and practical aspects.

He began studying group codes for the Gaussian channel, now used in cellular systems. He then became interested in the theory of error correcting codes, proposing an ingenious algorithm for the algebraic decoding of the perfect Golay code.

As regards applications, he contributed to the development of TOPSIM, a software tool for simulating telecommunication systems created at the Polytechnic of Turin, as well as to the first national experiences in distance learning.

The second part of his career was devoted to cryptography, algebra and number theory. He has devised, analyzed and improved both fast algorithms for operations on finite fields, achievable in hardware with the minimum number of gates, and cryptographic techniques based on algebraic objects, whose mathematical properties he has studied for a long time, including diophantine equations on number fields, and elliptic curves on finite fields.

Since 2015, he was an active and qualified member of the Editorial Board of AAEECC; his contributions have proved essential in dealing with submissions borderline between Engineering and Number Theory.

Michele Elia, a modest and sober person and at the same time decisive and austere, will leave an indelible memory and profound teaching in his students and colleagues.

Teo Mora

Managing Editor of AAECC